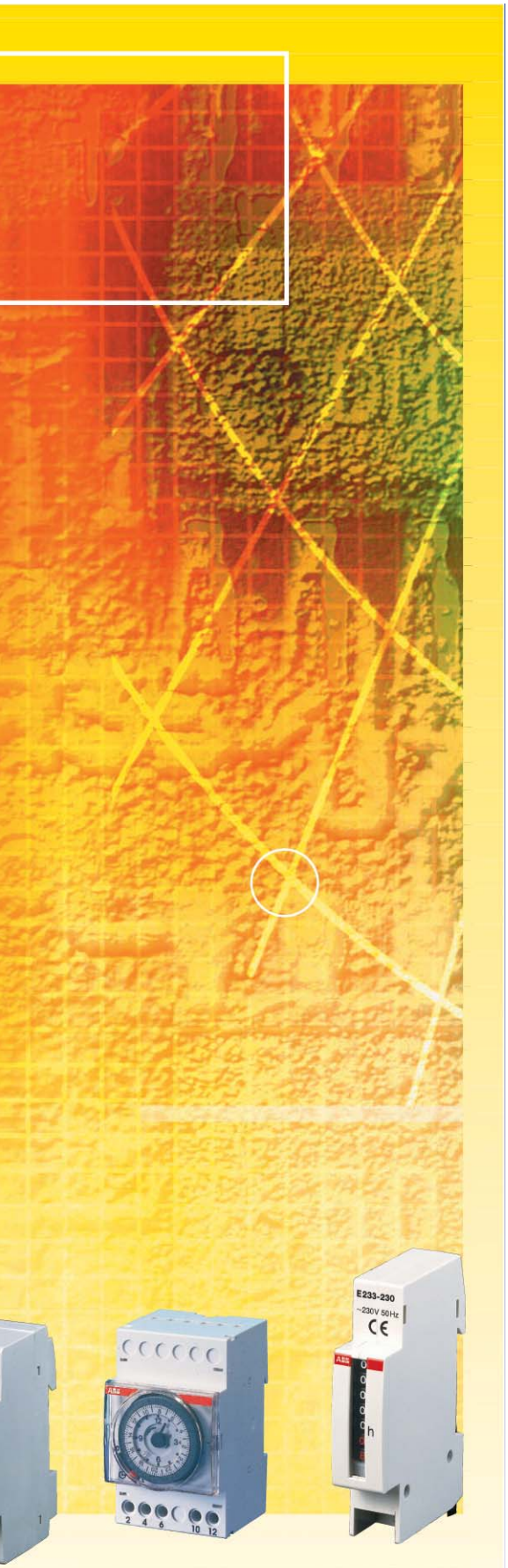
EE 22
kWh
Prog



Modular DIN Rail Components MDRC

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Modular DIN Rail Components MDRC

Switches 16, 25 and 32 A
E 220 series

DIN EN 60 669-1,
VDE 0632 Part 1

SK 0121 B 99

Devices for panel installation onto mounting rails (35 mm) according to DIN EN 60 715

mounting depth: 68 mm
mounting width: 1-, 2-, 3- and 4-pole switches = 17.5 mm = 1 module
color: gray, RAL 7035

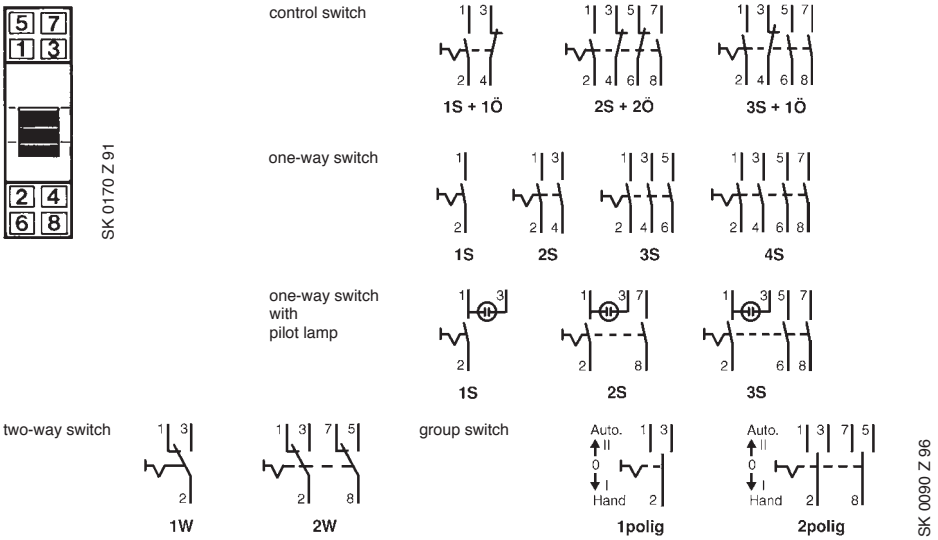
Technical Data

switching capacity:	1.25 I_n; 1.1 U_n; cos φ = 0.6 according to DIn VDE 0632, AC 22 according to VDE 0660 Part 107, IEC 947-3
short-circuit-withstand capacity:	3 kA, 400 V, cos φ = 0.8
sealable:	in ON and OFF positions
climatic resistance:	constant climate 40/92 DIN 50 015 alternating climate SFW DIN 50 017
ambient temperature:	– 25 °C/– 13° F to + 55 °C/131° F
storage temperature:	– 40 °C to + 70 °C
connection capacity:	from 1 x 1 mm² to 1 x 6 mm² or 2 x 2.5 mm² massive; from 1 x 0.75 mm² to 2 x 1.5 mm² flexible with connector sleeve or pin-end connector
positive opening:	according to DIN VDE 0113
rated voltage:	250/400 VAC
minimum rated voltage:	24 VDC/AC

Special features

- safe connection through box terminals
- captive screws with recessed/slotted head type Pozidriv size 1
- labels snap-on
- quick fastener easily accessible, detachable from below
- protection against electric shock according to DIN VDE 0660 part 514
- UL/CSA

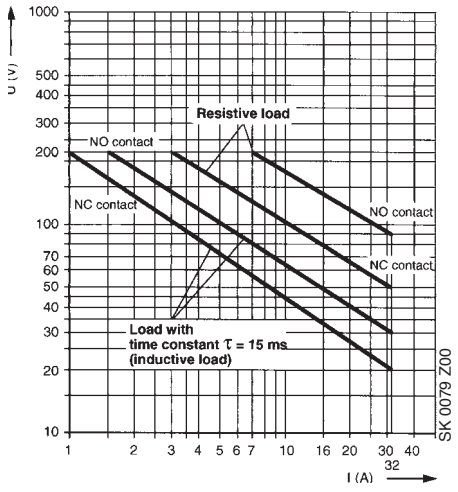
Terminal assignment



SK 0170 Z 91

SK 0090 Z 96

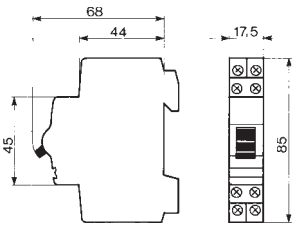
E 220
DC switching capacity



SK 0079 Z 00

dimensions

measurements in mm



SK 0164 Z 91

SK 0122 B 99

E 221-11

SK 0057 B 98

E 221-10 x

SK 0058 B 98

E 221-4

Selection table

style	rated voltage VAC	power loss W	order details type code	order code	bbn 40 12233 EAN	price 1 piece	price group	w'ght 1 pc. kg	pack. unit pc.
Control switch									
rated current = 16 A									
2 NO + 2 NC	250	1.92	**E 221-22**	**GH E221 1001 R0006**	**00270 2**			0.070	10
3 NO + 1 NC	400	1.92	**E 221-31**	**GH E221 1001 R0007**	**00280 1**			0.070	
1 NO + 1 NC	250	0.96	**E 221-11**	**GH E221 1001 R0005**	**00260 3**			0.070	10
rated current = 25 A									
1 NO + 1 NC	250	2.26	**E 222-11**	**GH E222 1001 R0005**	**00400 3**			**0.070**	**10**
One-way switch									
rated current = 16 A									
1 NO	250	0.48	**E 221-10**	**GH E221 1001 R0001**	**00220 7**			0.055	10
2 NO	250	0.96	**E 221-20**	**GH E221 1001 R0002**	**00230 6**			0.060	
3 NO	400	1.44	**E 221-30**	**GH E221 1001 R0003**	**00240 5**			0.065	
4 NO	400	1.92	**E 221-40**	**GH E221 1001 R0004**	**00250 4**			0.070	
rated current = 25 A									
1 NO	250	1.13	**E 222-10**	**GH E222 1001 R0001**	**00360 0**			0.055	10
2 NO	250	2.26	**E 222-20**	**GH E222 1001 R0002**	**00370 9**			0.060	
3 NO	400	3.39	**E 222-30**	**GH E222 1001 R0003**	**00380 8**			0.065	
4 NO	400	4.52	**E 222-40**	**GH E222 1001 R0004**	**00390 7**			0.070	
rated current = 32 A									
1 NO	250	2.2	**E 223-10**	**GH E223 1001 R0001**	**96570 0**			0.055	10
2 NO	250	4.4	**E 223-20**	**GH E223 1001 R0002**	**96580 9**			0.060	
3 NO	400	6.6	**E 223-30**	**GH E223 1001 R0003**	**96590 8**			0.065	
4 NO	400	8.8	**E 223-40**	**GH E223 1001 R0004**	**96600 4**			0.070	
One-way switch with built-in pilot lamp for 230 V~									
rated current = 16 A									
1 NO	250	0.5	**E 221-10 x**	**GH E221 1001 R0011**	**00310 5**			0.060	10
2 NO	250	1.0	**E 221-20 x**	**GH E221 1001 R0012**	**00320 4**			0.065	
3 NO	400	1.5	**E 221-30 x**	**GH E221 1001 R0013**	**00330 3**			0.087	
rated current = 25 A									
1 NO	250	1.15	**E 222-10 x**	**GH E222 1001 R0011**	**00420 1**			0.060	10
2 NO	250	2.30	**E 222-20 x**	**GH E222 1001 R0012**	**00430 0**			0.065	
3 NO	400	3.45	**E 222-30 x**	**GH E222 1001 R0013**	**00440 9**			0.087	
Two-way switch									
rated current = 16 A									
1 CO	250	0.48	**E 221-6**	**GH E221 1001 R0008**	**00290 0**			0.060	10
2 CO	250	0.96	**E 221-6/2**	**GH E221 1001 R0009**	**00300 6**			0.070	10
rated current = 25A									
1 CO	250	1.13	**E 222-6**	**GH E222 1001 R0008**	**00410 2**			0.060	10
Two-way switch with two off positions (I-O-II, manual-OFF-automatic)									
rated current = 16 A									
1-pole	250	0.48	**E 221-4**	**GH E221 1001 R0014**	**00340 2**			0.060	10
2-pole	250	0.96	**E 221-4/2**	**GH E221 1001 R0015**	**00350 1**			0.070	10
rated current = 25 A									
1-pole	250	1.13	**E 222-4**	**GH E222 1001 R0014**	**00450 8**			0.060	10

Modular DIN Rail Components MDRC

Switches 16 to 125 A
E 240 and E 270 series

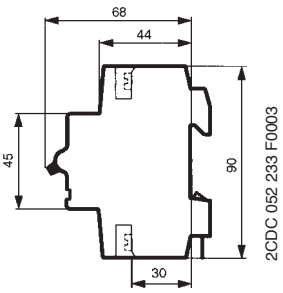
DIN EN 60 669-1,
VDE 0632 Part 1,
IEC 947-3

Devices for panel installation onto mounting rails (35 mm) according to DIN EN 60 715

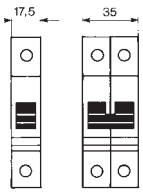
mounting depth: 68 mm
mounting width: per pole = 17.5 mm = 1 module
color: casing: gray, RAL 7035
operating lever: rt = red, RAL 3000; gr = dark grey, RAL 7000

dimensions

measurements in mm

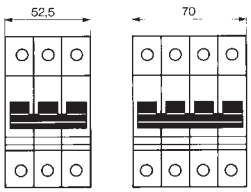


E 240 ...
E 270 ...



E 241
E 271

E 242
E 272



E 243
E 273

E 244
E 274

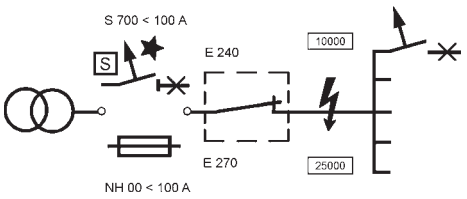
SK 0166 Z 91

Technical data

switching capacity:	1.25 I_n; 1.1 U_n; cos φ = 0.3 according to VDE 0632 E 240: AC 21 A according to VDE 0660 Part 107, DIN EN 60 947-3 or IEC 947-3 E 270: AC 22 A according to VDE 0660 Part 107, DIN EN 60 947-3 or IEC 947-3
min. contact rating:	6 V; 0.5 mA; 0.03 VA
positive opening:	according to DIN VDE 0113
short-circuit withstand capacity:	E 240 = 10 kA_{eff}, E 270 = 25 kA_{eff} in series with NH 00 100 A gL, and selective main circuit breaker S 700
rated voltage:	240/400/415 VAC, 50/60 Hz (E 240 cannot be used for DC!)
connection capacities:	E 240 to 25 mm^2, E 270 to 50 mm^2
climatic resistance acc. to DIN IEC 68-2-30:	constant climate 23/83, 40/93, 55/20 [-C/RH] [1] alternating climate 25/95 – 40/93 [-C/RH]
storage temperature:	– 40 °C/° F to + 70 °C/180° F
ambient temperature:	– 25 °C/–13 °F to + 55 °C/131 °F
on daily average:	m + 35 °C/95 °F
shock protection:	30 g at least 2 impacts shock duration 13 ms
vibration resistance acc. to DIN IEC 68-2-6:	5 g, 20 sweep cycles 5 ... 150 ... 5 Hz at 0.9 · I_n

Special features

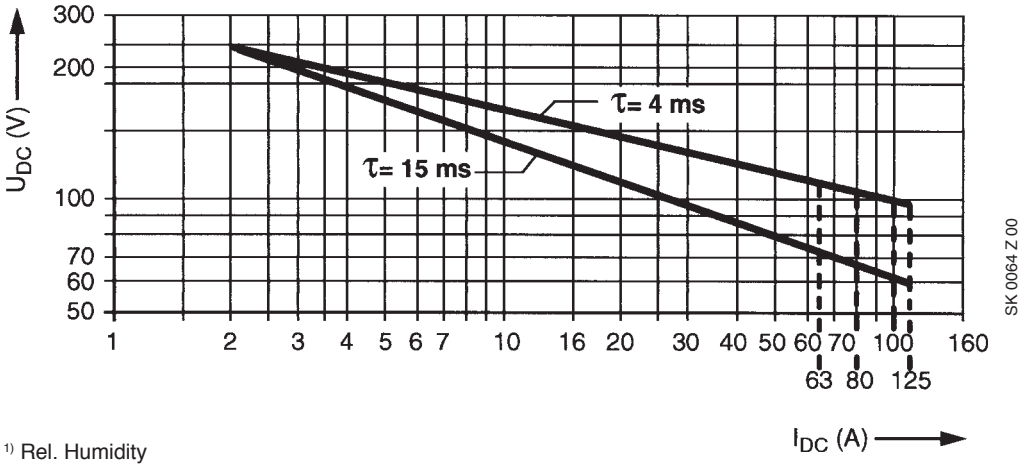
- combined box terminals make it possible to connect individual conductors and busbars simultaneously
- captive screws with recessed/slotted head type Pozidriv size 2
- labels snap-on
- quick fastener easily accessible detachable from below
- protection against electric shock according to DIN VDE 0660 part 51



SK 0046 Z 97

DC switching capacity per pole
(2.000 switching cycles)

E 271-63 A, E 271-80 A, E 271-100 A; E 271-125 A



SK 0064 Z 00

[1] Rel. Humidity

Modular DIN Rail Components MDRC

Switches 16 to 125 A
E 240 and E 270 series

DIN EN 60669-1,
VDE 0632 Part 1,
IEC 947-3

SK 0243 B 91

E 271/63 rt

SK 0244 B 91

E 272/63 rt

SK 0245 B 91

E 273/63 rt

SK 0246 B 91

E 274/80 rt

SK 0247 B 91

locking device

SK 0110 B 91

SA 3

SK 0248 B 91

label

Selection table

poles	rated voltage VAC	power loss W	order details type code	order code	bbn 40 12233 EAN	price 1 piece	price group	w'ght 1 pc. kg	pack. unit pc.
rated current = 16 A									
1 NO	240	0.9	**E 241/16 rt**	**GJ F152 1110 R0015**	**57167 8** [1]			0.080	10
2 NO	415	1.8	**E 242/16 rt**	**GJ F152 2110 R0015**	**57171 5** [1]			0.175	5
3 NO	415	2.7	E 243/16 rt	**GJ F152 3110 R0015**	**57172 2** [1]			0.270	3
4 NO	415	3.6	E 244/16 rt	**GJ F152 4110 R0015**	**57173 9** [1]			0.365	2
rated current = 32 A									
1 NO	240	1.5	**E 241/32 rt**	**GJ F152 1130 R0015**	**83710 6**			0.080	10
2 NO	415	3.0	**E 242/32 rt**	**GJ F152 2130 R0015**	**59040 7**			0.175	5
3 NO	415	4.5	**E 243/32 rt**	**GJ F152 3130 R0015**	**83720 5**			0.270	3
4 NO	415	6.0	**E 244/32 rt**	**GJ F152 4130 R0015**	**83730 4**			0.365	2
rated current = 40 A									
1 NO	240	1.8	**E 241/40 rt**	**GJ F152 1140 R0015**	**57891 2** [1]			0.080	10
2 NO	415	3.6	**E 242/40 rt**	**GJ F152 2140 R0015**	**57892 9** [1]			0.175	5
3 NO	415	5.4	**E 243/40 rt**	**GJ F152 3140 R0015**	**57893 6** [1]			0.270	3
4 NO	415	7.2	**E 244/40 rt**	**GJ F152 4140 R0015**	**57894 3** [1]			0.365	2
rated current = 45 A									
1 NO	240	1.9	**E 241/45 rt**	**GJ F152 1150 R0015**	**59020 9**			0.080	10
2 NO	415	3.8	**E 242/45 rt**	**GJ F152 2150 R0015**	**59050 6**			0.175	5
3 NO	415	5.7	**E 243/45 rt**	**GJ F152 3150 R0015**	**59070 4**			0.270	3
4 NO	415	7.6	**E 244/45 rt**	**GJ F152 4150 R0015**	**59080 3**			0.365	2
rated current = 63 A									
1 NO	240	2.5	**E 241/63 rt**	**GJ F152 1170 R0015**	**59030 8**			0.100	10
2 NO	415	5.0	**E 242/63 rt**	**GJ F152 2170 R0015**	**59060 5**			0.215	5
3 NO	415	7.5	**E 243/63 rt**	**GJ F152 3170 R0015**	**96610 3**			0.330	3
4 NO	415	10	**E 244/63 rt**	**GJ F152 4170 R0015**	**96620 2**			0.440	2
1 NO	240	2.5	**E 271/63 rt**	**GJ F151 1170 R0015**	**58810 7**			0.100	10
2 NO	415	5.0	**E 272/63 rt**	**GJ F151 2170 R0015**	**58840 4**			0.215	5
3 NO	415	7.5	**E 273/63 rt**	**GJ F151 3170 R0015**	**58870 1**			0.330	3
3 NO	415	7.5	**E 273/63 gr** [2]	**GJ F151 3370 R0001**	**58810 4**			0.330	3
4 NO	415	10	**E 274/63 rt**	**GJ F151 4170 R0015**	**58870 8**			0.440	2
4 NO	415	10	**E 274/63 gr** [2]	**GJ F151 4370 R0001**	**59000 1**			0.440	2
rated current = 80 A									
1 NO	240	4	**E 271/80 rt**	**GJ F151 1180 R0015**	**58820 6**			0.105	10
2 NO	415	8	**E 272/80 rt**	**GJ F151 2180 R0015**	**58850 3**			0.220	5
3 NO	415	12	**E 273/80 rt**	**GJ F151 3180 R0015**	**58880 0**			0.335	3
3 NO	415	12	**E 273/80 gr**	**GJ F151 3380 R0001**	**58930 2**			0.335	3
4 NO	415	16	**E 274/80 rt**	**GJ F151 4180 R0015**	**58980 7**			0.450	2
rated current = 100 A									
1 NO	240	6.5	**E 271/100 rt**	**GJ F151 1190 R0015**	**58830 5**			0.105	10
2 NO	415	13	**E 272/100 rt**	**GJ F151 2190 R0015**	**58860 2**			0.220	5
3 NO	415	19.5	**E 273/100 rt**	**GJ F151 3190 R0015**	**58890 9**			0.335	3
3 NO	415	19.5	**E 273/100 gr**	**GJ F151 3390 R0001**	**58950 0**			0.335	3
4 NO	415	26	**E 274/100 rt**	**GJ F151 4190 R0015**	**58990 6**			0.450	2
rated current = 125 A									
1 NO	240	9	**E 271/125 rt**	**GJ F151 1191 R0015**	**83670 3**			0.105	10
2 NO	415	8	**E 272/125 rt**	**GJ F151 2191 R0015**	**83680 2**			0.220	5
3 NO	415	27	**E 273/125 rt**	**GJ F151 3191 R0015**	**83690 1**			0.335	3
3 NO	415	27	**E 273/125 gr**	**GJ F151 3391 R0001**	**57163 0** [1]			0.335	3
4 NO	415	36	**E 274/125 rt**	**GJ F151 4191 R0015**	**83700 7**			0.450	2

[1] **bbn-No. 40 16779**

[2] Switches E 273/63 gr. E 274/63 gr marked ★ and ÖVE comply with the so-called "Technical Power Supply Regulations TAB 7.2" as well as VDE 0632 and fulfill the short-circuit withstand capacity required therein for use in 10 kA supply systems for equipment located in between the last overcurrent protective device in front of the meter and the sub-circuit distribution board.

25 A types upon request. All variants also available with gray operating leve

Locking device for MBCs and one-way switches

providing protection against unauthorised or unsafe actuation of switching levers (VDE 0113/6.2.1.c). By using the adaptor, the switching lever is fixed in either the ON or the OFF position by means of a padlock with a shackles diameter of 4 mm max. . In the case of multi-pole devices it is possible to fit each pole with an individual lock.
The lock adaptor is suitable for switches of the E 220, E 240 and E 270 series.

lock adaptor	**SA 1**	**GJF110 1903 R0001**	**58760 5**			0.004	10
padlock with 2 locks	**SA 2**	**GJF110 1903 R0002**	**58770 4**			0.020	10
lock adaptor incl. padlock 3 locks transparent box	**SA 3**	**GJF110 1903 R0003**	**58780 3**			0.050	10
padlock with identical locking	**SA 2i**	**GJF110 9999 R0001**	**96940 1**			0.020	10

SK 0252 B 91

E 240 and E 270 switches may be cross-wired by using KS busbars or the PSB-N busbar block with series S2 MBCs and series F3 residual-current-operated circuit-breakers (RCCBs).

Modular DIN Rail Components MDRC

Switches 63 and 80 A

E 463/3-KB, E 480/3-KB, E 463/3-SL

SK 0119 B99

E 463/3-KB

SK 0072 B 94

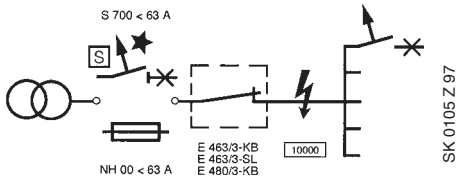
E 463/3-SL

Devices for panel installation onto mounting rails (35 mm) according to DIN EN 60 715

mounting depth: 68 mm
mounting width: 44 mm = 2.5 modules
color: gray, RAL 7035

Technical data

switching capacity: 1.25 I_n; 1.1 U_n; cos φ = 0.6 according to VDE 0632
connection capacity: up to 25 mm²
positive opening: according to DIN VDE 0113
shock-protected: according to DIN VDE 0660 part 514
rated voltage: 250/400 VAC
min. contact rating: 4 mA/24 VAC
ambient temperature: – 25 °C/– 13 °F 13 to + 55 °C/131 °F
storage temperature: – 40 °C to + 70 °C



SK 0105 Z 97

Special features

• short-circuit **withstand capacity**: 10 kA, 400 VAC

Switches E 463/3-KB and E 463-SL marked ★ and VDE comply with the so-called “Technical Power Supply Regulations TAB 7.2” as well as VDE 0632 and fulfill the short-circuit withstand capacity required therein for the use von 10 kA supply systems for equipment located in between the last overcurrent device before the meter and the sub-circuit distribution board.

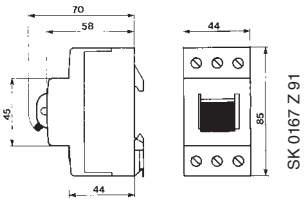
Selection table

poles	rated voltage VAC	power loss W	order details type code	order code	bbn 40 12233 EAN	price 1 piece	price group	w'ght 1 pc. kg	pack. unit pc.
rated current = 63 A									
3 NO	400	5.4	E 463/3-KB	GH V021 0864 R0001	52980 3			0.190	1/50
rated current = 63 A (can be locked with key provided by utility company and is sealable and lockable with padlock)									
3 NO	400	5.5	E 463/3-SL	GH V021 0864 R0005	06240 4 [1]			0.195	1/50
rated current = 80 A									
3 NO	400	9.9	E 480/3-KB	GH V021 0864 R0002	52990 2			0.210	1/50
Padlock									
for E 463/3-SL			SA 2	GJ F110 1903 R0002	58770 4			0.020	10

[1] bbn No. 40 16779

dimensions

measurements in mm



SK 0167 Z 91

E 463/3-KB
E 463/3-SL
E 480/3-KB

Modular DIN Rail Components MDRC
LEE 230 power failure signalling lamp

LEE

Device for installation on Schuko (E 1175, E 1175 C) and Italian (M 1173) socket outlets for rails mounting according to DIN EN 60 715

color: gray, RAL 7035

Application

This lamp automatically switches on when the voltage fails. It can be plugged either into modular sockets or into sockets of all wiring accessories series on the market: the lamp it is provided with allows to use it also as a torch. The green led signals the standard operation and the red led indicates the device is OFF for battery saving.

Technical data

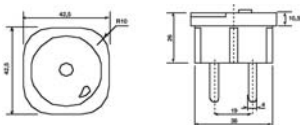
rated input voltage:	230 VAC; 50 – 60 Hz
charging time:	24 hours
operating temperature:	0 to +45 °C
stndby battery:	3 hours
min. life cycle (battery):	5 years
lighting level:	3000 mcd

Selection table

code	order details 8012542 order code	bbn 1 piece EAN	price group	price 1 pc.	w'ght unit kg	pack. pc.	type
withdrawable power failure signalling lamp	LEE-230	16072883	507406			0.1	1

dimensions

measurements in mm



SK 084 B 00

pushbutton

Devices for panel installation onto mounting rails (35 mm) according to DIN EN 60 715

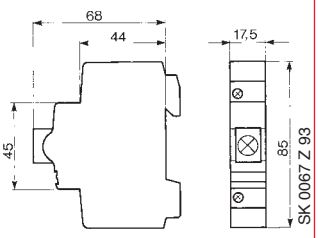
mounting depth:	68 mm
mounting width:	17.5 mm = 1 module
color:	gray, RAL 7035
short circuit withstand capacity:	3 KA with relative back-up fuse
climatic resistance:	constant climate 40/92 DIN 50015 alternating climate 57 W DIN 50017
ambient temperature:	– 25 °C to + 55 °C
storage temperature:	– 40 °C to + 70 °C
connection capacity:	from 1 x 1 mm^2 to 1 x 6 mm^2 or 2 x 2.5 mm^2 massive wire; from 1 x 0.75 mm^2 to 2 x 1.5 mm^2 flexible wire with connector sleeve or pin-end connector
max. rated voltage:	260 VAC
min. rated voltage:	150 VAC

Special features

- safe connection ensured by box terminals
- captive screws with recessed/slotted head system Pozidriv size 1
- labels snap-on
- protection against electric shock according to DIN VDE 0660 part 514
- collars available in 5 colors and buttons in 6 colors
- UL/CSA approval

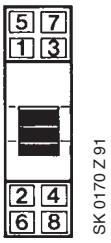
dimensions

measurements in mm



SK 0067 Z 93

terminal assignment



SK 0170 Z 91

pushbuttons
indicator lights

pushbuttons

1 S + 1 Ö

illuminated pushbuttons

1 S + 1 Ö

indicator lights

SK 0188 Z 99

SZ-KS 7/12 N SK 0254 B 91

SK 0098 B 91

comb busbar SZ-KS 7/12 N

Comb busbars

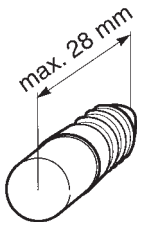
lengths supplied mm	no. of poles	order details type code	order code	bbn 40 16779 EAN	Cu no.	price 1 pc.	price group	w'ght 1 pc. kg	pack. unit piece
Comb busbars, single-phase, for cross-wiring, providing protection against electric shock cross section 6 mm^2									
200 mm	12 x 1	**SZ-KS 7/12 N**	**GH V036 0875 R0020**	**54351 4**	0.038			0.025	100
990 mm	56 x 1	**SZ-KS 7/56 N**	**GH V036 0875 R0021**	**54352 1**	0.187			0.110	50

SK 087 B 00

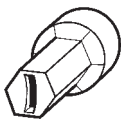
pushbutton

SK 079 B 00

indicator light



SK 0203 Z 99


SK 0200 Z 99

E 220-LZ

Selection table

style	power loss W	order details type code	order code	bbn 40 12233 EAN	price 1 piece	price group pe	w'ght 1 pc. kg	pack. unit pc.
rated current for pushbuttons and illuminated pushbuttons = 16 A, rated voltage = 250 VAC								
Pushbutton 1 NO + 1 NC								
gray	0.96	E 225 – 11 B	GH E225 1001 R0001	00460 7			0.055	10
red		E 225 – 11 C	GH E225 1001 R0002	00470 6				
green		E 225 – 11 D	GH E225 1001 R0003	00480 5				
yellow		E 225 – 11 E	GH E225 1001 R0004	00490 4				
black		E 225 – 11 F	GH E225 1001 R0005	00500 0				
blue		E 225 – 11 G	GH E225 1001 R0006	00510 9				
Pushbutton 1 NO + 1 NC, without button								
–	0.96	E 225 – 11 Z	GH E225 1001 R0007	00520 8			0.053	10
Illuminated pushbutton 1 NO + 1 NC. with glow lamp E 10/230 VAC								
transpar.	1.5	E 227 – 11 B	GH E227 1001 R0011	49650 6 [3]			0.055	10
red		E 227 – 11 C	GH E227 1001 R0012	03350 3 [3]				
green		E 227 – 11 D	GH E227 1001 R0013	49651 3 [3]				
yellow		E 227 – 11 E	GH E227 1001 R0014	49653 7 [3]				
blue		E 227 – 11 G	GH E227 1001 R0016	49654 4 [3]				
Illuminated pushbutton 1 NO + NC, without collar with E 10 holder for pilot lamp max. 2 W								
–	0.96 [2]	E 227 – 11 Z	GH E227 1001 R0027	03360 2 [3]			0.045	10
Indicator lights with glow lamp E 10/230 VAC								
transpar.	1.03	E 229 – B	GH E229 1001 R0001	00590 1			0.045	10
red		E 229 – C	GH E229 1001 R0002	00600 7				
green		E 229 – D	GH E229 1001 R0003	00610 6				
yellow		E 229 – E	GH E229 1001 R0004	00620 5				
blue		E 229 – G	GH E229 1001 R0006	00630 4				
Indicator lights without collar with E 10 holder for pilot lamp 2 W max.								
–	0.48 [2]	E 229 – Z	GH E229 1001 R0007	00640 3			0.040	10
Buttons, not transparent, for pushbuttons E 225								
gray	–	E 220 – B 1	GH E220 0002 R0001	00100 2			0.002	100
red		E 220 – C 1	GH E220 0002 R0002	00110 1				
green		E 220 – D 1	GH E220 0002 R0003	00120 0				
yellow		E 220 – E 1	GH E220 0002 R0004	00130 9				
black		E 220 – F 1	GH E220 0002 R0005	00140 8				
blue		E 220 – G 1	GH E220 0002 R0006	00150 7				
Collars, transparent, for illuminated pushbutton E 227								
transpar.	–	E 220 – B	GH E220 0001 R0001	00050 0			0.002	100
red		E 220 – C	GH E220 0001 R0002	00060 9				
green		E 220 – D	GH E220 0001 R0003	00070 8				
yellow		E 220 – E	GH E220 0001 R0004	00080 7				
blue		E 220 – G	GH E220 0001 R0006	00090 6				
Collars, transparent, with lamp symbol for indicator lights E 229								
transpar.	–	E 220 – B 3	GH E220 0003 R0001	00160 6			0.002	100
red		E 220 – C 3	GH E220 0003 R0002	00170 5				
green		E 220 – D 3	GH E220 0003 R0003	00180 4				
yellow		E 220 – E 3	GH E220 0003 R0004	00190 3				
blue		E 220 – G 3	GH E220 0003 R0006	00200 9				
Lamps with holder E 10 for illuminated pushbuttons and indicator lights								
Filament lamps for AC operation								
12 V	1.2 W	E 10/12 [1]	GJ N97 6167 P0113	63160 5			0.004	1
24 V	2 W	E 10/24 [1]	GJ N97 6167 P0114	63180 3				
48 V	2 W	E 10/48 [1]	GH N97 6123 P0005	63200 8				
60 V	2 W	E 10/60 [1]	GJ N97 6167 P0115	63210 7				
Glow lamps for AC or DC operation								
110 VAC	0.29	E 10/110	GMN48 5346 P0411	63220 6			0.003	1
230 VAC	0.58	E 10/230	GMN48 5346 P0410	98370 4				
220 VDC	0.35	E 10/220	GJ N97 6359 P0004	66730 7				
lamp driver		E 220-LZ	GH E220 0004 R0001	00290 2 [4]			0.002	10

[1] Filament lamps must not be used above 2 W max.

[2] When calculating the power loss, add the wattage of the glow lamp/filament lamp used.

[3] bbn No. 40 16779

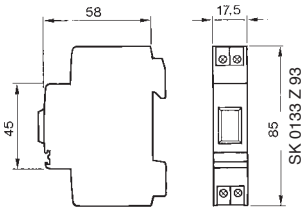
[4] bbn No. 40 11395

SK 0124 B 99

E 228-WM

dimensions

measurements in mm



SK 0133 Z 93

SK 0155 B 92

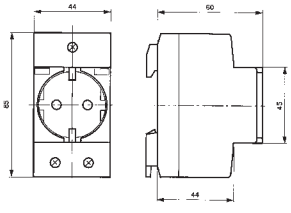
socket-outlet E 1175

SK 0066 B 98

socket-outlet E 1175 c
with hinged lid IP3X in the distribution board

dimensions

measurements in mm



SK 0024 Z 92

Alarm indicators

Device for panel installation onto mounting rails (35 mm) according to DIN EN 60 715

mounting depth: 68 mm
mounting width: 17.5 mm = 1 module
color: gray, RAL 7035

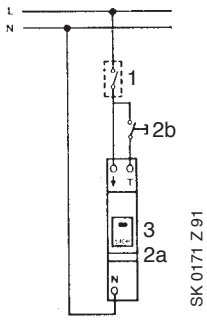
Application

The alarm indicator transmits optical and acoustic signals. Malfunctioning is indicated by a flashing and short beeping signal.
After the indication is detected, press the acknowledgement button (STOP) or an external pushbutton to delete the acoustic signal, the optical signal will then turn into a steady light.
The device is actuated by external contacts of alarm, malfunctioning, or warning indicators, or, as the case may be, via limit switches or auxiliary contacts.

Technical data

rated voltage: 230 VAC 50 Hz (120 VAC 60 Hz)
power loss: < 4 W
cycle time: on/off 1s ±10 %
ON duration ED: 100 %
operating frequency: typ. 3.3 kHz
sound level: typ. 60 dB
temperature range: – 20 °C/– 4 ° F to + 50 °C/122 °F
protection against electric shock: according to DIN VDE 0660 part 514
connection capacity: up to 1 x 6 mm² or 2 x 2.5 mm² massive wire; up to 2 x 1.5 mm² flexible with connector sleeve or pin-end connector

wiring diagram



SK 0171 Z 91

Function

As soon as the alarm indicator is connected to rated voltage via a malfunctioning indication contact (1), the acoustic signal and the lamp (3) of the alarm indicator go on and off in one-second intervals to indicate malfunctioning.
Press the Stop button of the device (2a) or an external button (2b) (acknowledgement) to cause the alarm indicator to switch off the acoustic signal.
The lamp (3) then turns into a steady light, until the malfunctioning is eliminated and, as a consequence, the malfunction indication contact reopens.

Selection table

description	order details		bbn 4012233 EAN	price 1 pc.	price group	w'ght 1 pc. kg	pack. unit piece
	type code	order code.					
alarm indicators	E 228-WM *	GH E228 1001 R0001	63030 1			0.070	1

* UL approval

Socket-outlets

Device for panel installation onto mounting rails (35 mm) according to DIN EN 60715

mounting depth: 68 mm
mounting width: 44 mm = 2.5 modules
color: gray, RAL 7035

Technical data

rated voltage: 250 VAC
rated current: 10/16 A
protection against electric shock: according to IEC 884-1; CEI 23-50; DIN VDE 0660 part 514; NF C61-303
connection capacity: up to 10 mm²
ambient temperature: – 35 °C/95 °F ... + 55 °C/131 °F
casing material: self-extinguishing plastic, halogene/dioxine-free

Selection table

power loss		order details		bbn 80 12542 EAN	price 1 piece	price group	w'ght 1 pc. kg	pack. unit pc.
W	style	type code	order code					
0.6	SCHUKO	E 1175	16019439	33470 5			0.120	4
0.6	SCHUKO	E 1175 c	16019421	34250 2			0.120	4
0.6	Italy	M 1173 *	16019447	00410 3			0.105	4
0.6	France	M 1174 *	16019454	00660 2			0.105	4

* tamper-proof

Modular DIN Rail Components MDRC

Staircase lighting time-delay switches E 232

SK 0177 B 02

E 232-230

Application

As a rule, staircase lighting time-delay switches (t.d.s) are controlled by pushbuttons fitted with glow lamps. The switches are designed to sustain a continuous load of up to 50 glow lamps and can therefore be used in multi-story buildings.

T.d.s. E 232-230 is equipped with an electromechanical timer having a synchronous-motor-controlled mechanism that ensures a high level of operational reliability in any desired mounitng position. The time range is adjustable in intervals of 15 sec. within 1 to 7 min. Resettable after 30 sec.

Staircase lighting time-delay switch E 232 E has an electronic time delay function. Noteworthy features of the device include: high switching capacity, 100 mA glow lamp current to the pushbuttons, infinitely adjustable time range from 1 to 12 minutes as well as a low switching noise. The devices of type E 232 E-8/230 have an additional control input that is metallically separated for AC/DC 8..230 V.

E 232 E-8/230 Plus offers an integrated warning function (2 warning signals that double flash) according to DIN 18015-2, as well as additional long-term periods from 10-30 minutes adjustable in 5-minutes' steps by shortly pressing the button once for each step, press longer for 60-minutes' intervals (if in PROG modus).
Suitable also for energy-saving lamps and fluorescent lamps with electronic ballast.

The electronic semi-light module E 232-HLM is an add-on to all t.d.s for semi-light control according to DIN 18015-2. During the alarm period, the module switches glow lamps and 230 V halogen lamps of up to 2300 W to 50 % of the normal output current. Adjustable time range from 20 – 60 sec.

Type	**E 232-230**	**E 232E-230**	**E 232E-8/230**	**E 232E-8/230 Plus**
time range	1 – 7 min.	1 – 12 min.	1 – 12 min.	1 – 12 min.
control voltage 230 VAC	●	●	●	●
universal voltage additionally			8 .. 230 VAC/DC	8 .. 230 VAC/DC
filament lamp current	50 mA	100 mA	100 mA	100 mA
automatic recognition 3/4 lead circuit	switches (side-mounted)	●	●	●
can be connected in series	●	●	●	●
steady-light switch	●	●	●	●
advance warning (double flash)				●
adjustment 10 – 30 min. in 5-min intervals*				●
long-term range of 60 min.*				●
load of filament lamp	2300 W	2300 W	2300 W	2300 W

* in PROG mode

Technical Data	**E 232-230**	**E 232E-...**	**E 232-HLM**
rated voltage:	230 VAC, 50 Hz	230 VAC, 50/60 Hz	230 VAC, 50/60 Hz
range of control voltage:	0.9 to 1.1 U_n	0.9 to 1.1 U_n	0.9 to 1.1 U_n
short-circuit rupturing capacity:	16 A, 230 VAC	16 A, 230 VAC	10 A, 230 VAC
load of filament lamp:	2300 W	2300 W	2300 W
load of halogen lamp:	2300 W	2300 W	2300 W
fluorescent lamps series compensated/not compensated:	2300 VA	2300 VA	not permissible
fluorescent lamps inductive or capacitive:	2300 VA	2300 VA	not permissible
fluorescent lamps shunt compensated:	1300 VA (70 μF)	1300 VA (70 μF)	not permissible
electronic ballast:	9 x 7 W; 6 x 11 W; 5 x 15 W; 5 x 20 W	9 x 7 W; 6 x 11 W; 5 x 15 W; 5 x 20 W	not permissible
inductive load cos φ = 0.6/230 VAC:	2300 VA	2300 VA	not permissible
contact material:	Ag Sn O2	Ag Sn O2	Ag Sn O2
contact gap:	≥ 3 mm	≥ 0.4 mm	≥ 0.4 mm
service life, mechanical, switchover 103/h:	> 10^6	> 10^7	> 10^7
service life at rated load, cos φ = 1 or filament lamps 1000 W and 103/h:	> 10^5	> 10^5	> 10^5
service life at rated load cos φ = 0.6 and 103/h:	> 10^4	> 10^4	> 10^4
terminal cross section:	10·7 mm²	13·6 mm²	13·6 mm²
max. conductor cross section:	6 mm²	6 mm²	6 mm²
ON duration:	re-switchable after 30 sec.	100 %	100 %
ambient temperature:	– 10 °C/14°F to 50 °C/122°F	– 10 °C/14°F to 50 °C/122°F	– 10 °C/14°F to 50 °C/122°F
casing and insulation materials:	heat resistant, self-extinguishing thermoplast	heat resistant, self-extinguishing thermoplast	heat resistant, self-extinguishing thermoplast
control current at 230 VAC (8 AC):	4.5 mA	20 mA (min. 8 mA)	–
min. command time:	10 ms	10 ms	–
glow lamps parallel to 230 VAC control inputs:	50 mA	100 mA	–

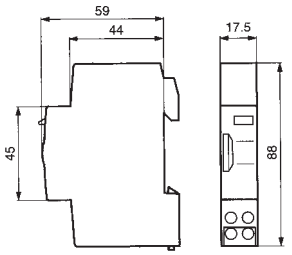
SK 174 B 02

E 232 E-8/230

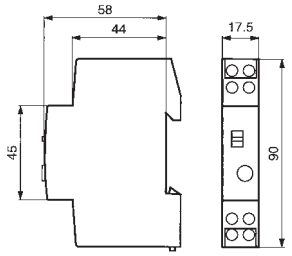
SK 176 B 02

E 232-HLM

measurements in mm



E 232-230 SK 0075 Z 02

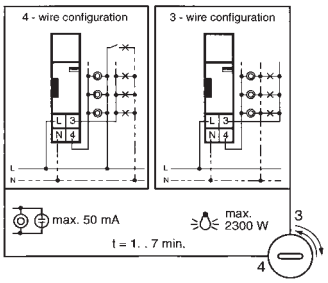


E 232 E
E 232 HLM SK 0093 Z 02

Selection table

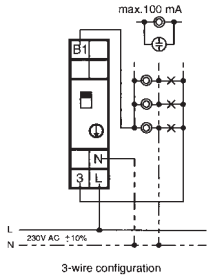
power loss		order details			price	price	weight	pack.
W	time range	type code	order code	40 16779 EAN	1 piece	group	1 pc. kg	unit piece
1 VA	1 … 7 min.	E 232-230	GH E232 1001 R0011	54824 3			0.081	10
4.5 VA	1 … 12 min.	E 232 E-230	GH E232 1001 R0012	54825 0			0.083	10
4.5 VA	1 … 12 min.	E 232 E-8/230	GH E232 1001 R0013	54826 7			0.092	10
4.5 VA	1 … 12 min.	E 232 E-8/230 Plus	GH E232 1001 R0014	54827 4			0.093	10
6 VA	20 … 60 sec.	E 232-HLM	GH E232 1001 R0010	54828 1			0.075	10

Wiring diagrams



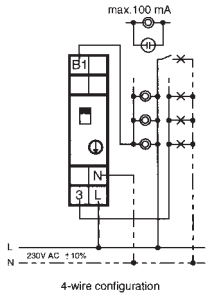
SK 0077 Z 02

E 232-230



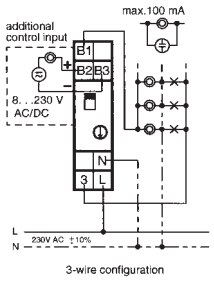
SK 0081 Z 02

E 232 E-230



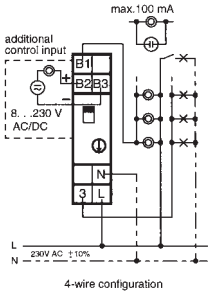
SK 0085 Z 02

E 232 E-230



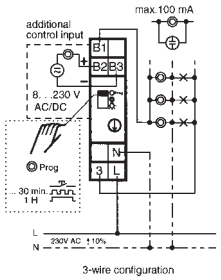
SK 0079 Z 02

E 232 E-8/230



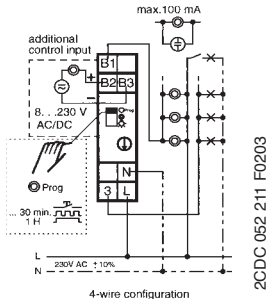
SK 0083 Z 02

E 232 E-8/230



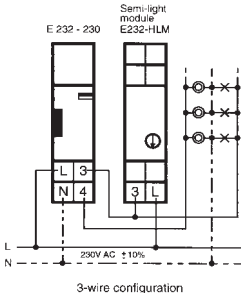
2CDC 052 210 F0203

E 232 E-8/230 Plus



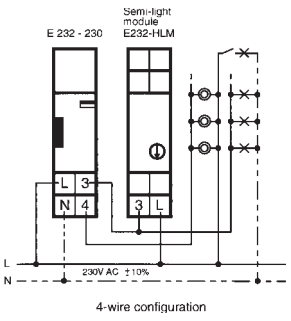
2CDC 052 211 F0203

E 232 E-8/230 Plus



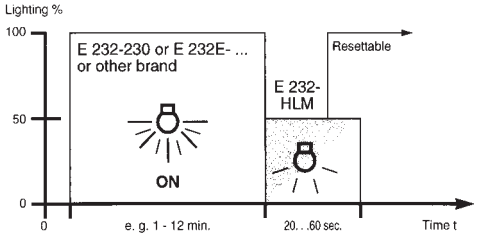
2CDC 052 212 F0203

E 232 HLM



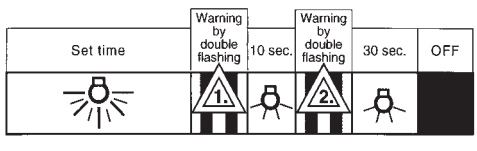
2CDC 052 213 F0203

E 232 HLM



2CDC 052 214 F0203

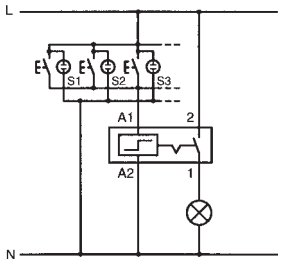
timing of a staircase lighting time-delay switch with semi-light module E 232-HLM



2CDC 052 215 F0203

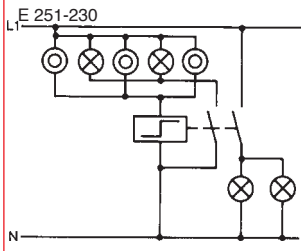
warning function of E 232E-8/230 Plus

Connection examples



Control of latching relay with any desired number of parallel pushbuttons. Glow lamp current 5 mA max.

SK 0219 Z 02



Control of latching relay with any desired number of parallel pushbuttons; Control of one contactor.

SK 0220 Z 02

Latching relays of the E 250 series are electromechanical switching devices controlled by relatively low current. Devices of 1 or 3 phase distributions can be operated.
The last switching position is maintained in the case of a voltage failure. Not to be mounted vertically!

The latching relays can be actuated manually directly with a slide switch.

E 250 latching relays can be supplemented by E 250CM contact modules (left side) as well as by the E 250H auxiliary switch. If latching relays and E 258CM are used, the central control voltage may differ from the local control voltage. When using contact module E 257CM (without contacts) with latching relays E 257, a permanent signal may occur instead of a rush current, then, the device must not be controlled via A 1.

Technical Data

	E 250/257	E 258 C
short-circuit rupturing capacity:	16 A 250 VAC (1-/2-pole) 400 VAC (3-/4-pole)	16A 250 VAC (1-/2-pole) 400 VAC (3-/4-pole)
load of filament lamps:	3000 W	3000 W
fluorescent lamps in twin-lamp circuit:	3000 W	3000 W
fluorescent lamp load shunt compensated:	2500 W	2500 W
fluorescent lamp load uncorrected cos φ = 0.5:	1800 W	1800 W
electronic ballast:	I_{on} ≤ 140 A/10 ms	I_{on} ≤ 140 A/10 ms
HQL and HQI uncorrected:	500 W	500 W
max. contact rating at DC:	7.5 W	12.5 W
min. contact loading per phase (below 5V):	2 W	2 W
power loss:	11 VA	12 VA
coil pick-up power:	14.5 VA (E257: 11 VA)	12 VA
contact gap/contact material:	3 mm/Ag Cd 015	3 mm/Ag Cd 015
service life mechanical; switchover at 10^3/h:	2 x 10^6	2 x 10^6
service life at rated load cos φ = 1 and 10^3/h:	3 x 10^6	3 x 10^6
max. switching rate:	10^3/h	10^3/h
bounce time:	3 ms	3 ms
connection capacity:	1.5 – 10 mm²	1.5 – 10 mm²
tightening torque:	0.8 Nm	0.8 Nm
ON duration ED*:	100 %	100 %
coil voltage range:		0.9 to 1.1 x Un 0.9 to 1.1 x Un
minimum command time:	0.1 sec.	0.1 sec.
interval between commands:	0.15 sec.	0.15 sec.
ambient temperature:	– 20 °C/– 4 °F to 45 °C/113°F	– 20 °C/– 4 °F to 45 °C/113 °F
max. parallel capacitance:	0.06 µF	0.06 µF
max. glow lamp current:	5 mA	5 mA
max. induced voltage at control inputs:	0.2 x U_n	0.2 x U_n

* If the coil is constantly energised, ensure that there is adequate space between the coil and the latching relays to keep the ambient temperature at bay or use contact module E257CM, then, the device must not be controlled via A 1.

Shunt connection of latching relays

It is not possible to control more than one latching relay by a pushbutton or contact, as doing so may lead to undefined contact positions preventing synchronisation. It is recommended not to control one latching relay by more than one LOCAL pushbutton.

Possible add-ons

Contact modules and auxiliary switches are fixed at the left-hand side in the following order, always starting with the latching relays:
First, the contact module or central contact module, then the auxiliary switches. No additional wiring or fixing accessories are needed.

Examples:

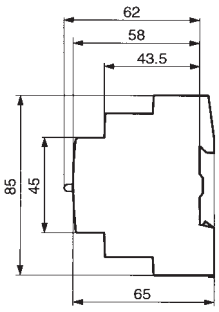
latching relay 230 VAC 4 NO contacts:	E252-230 + E250CM20
latching relay 24 VAC 3 NO contacts + 1 NC contact:	E252-24 + E250CM11
latching relay central 12 VDC 3 NO contacts same electr. potential:	E257C30-24
latching relay central 230 VAC 1 NO contact + 1 NC contact, same electr. potential:	E256-230 + E257CM
latching relay 230 VAC 1 NO contact + auxiliary switches 1 NO+1 NC:	E251-230 + E250H11

Compensator

The application of E250-CP compensator makes it possible to connect a larger number of illuminated pushbuttons to the latching relays. Rated voltage 230 VAC can only be used with 230 VAC pushbuttons with glow lamps.
Is installed parallel to coil.

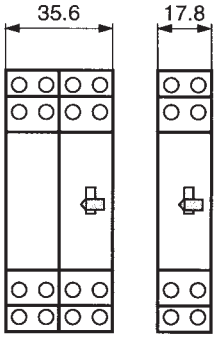
Max. number of indicator lights (with 0.6 mA glow lamp)

	E 250		E 257		E 258C	
	1- and 2-contacts	3- and 4-contacts	1- and 2-contacts	3- and 4-contacts	1- and 2-contacts	3- and 4-contacts
Without compensator	8	9	8	10	12	10
With 1 compensator	18	22	27	20	21	20
With 2 compensators	45	38	43	48	58	48



SK 0270 Z 02

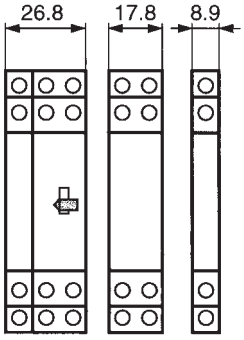
E 250



SK 0271 Z 02

E 257 C30

E 251
E 252
E 255
E 256
E 256.1
E 256.2
E 257 C10



SK 0321 Z 02

E 257 C20 E 250 CM E 257 CM
E 258 CM E 250 H

Selection table

contacts/voltage	order details type code	order code	bbn 80 12542 EAN	price 1 piece	price group	w'ght 1 pc. kg	pack. unit pc.
coil voltage U_c = 8 VAC							
1 NO/8 VAC	E 251-8	36010750	53050 3			0.114	12
2 NO/8 VAC	E 252-8	36010800	53100 5			0.116	12
1 NO + 1 NC/8 VAC	E 256-8	36010891	53190 6			0.116	12
series/8VAC	E 255-8	36010859	53150 0			0.21	12
coil voltage U_c = 12 VAC or 6 VDC							
1 NO/12 VAC or 6 VDC	E 251-12	36010727	53020 6			0.114	12
2 NO/12 VAC or 6 VDC	E 252-12	36010776	53070 1			0.116	12
1 NO + 1 NC/12 VAC or 6 VDC	E 256-12	36010867	53160 9			0.116	12
1 CO/12 VAC or 6 VDC	E 256.1-12	36017342	53720 5			0.115	12
2 CO/12 VAC or 6 VDC	E 256.2-12	36017375	53750 2			0.118	12
series/12 VAC or 6 VDC	E 255-12	36010826	53120 3			0.121	12
coil voltage U_c = 24 VAC or 12 VDC							
1 NO/24 VAC or 12 VDC	E 251-24	36010743	53040 4			0.114	12
2 NO/24 VAC or 12 VDC	E 252-24	36010792	53090 9			0.116	12
1 NO + 1 NC/24 VAC or 12 VDC	E 256-24	36010883	53180 7			0.116	12
1 CO/24 VAC or 12 VDC	E 256.1-24	36017367	53740 3			0.115	12
2 CO/24 VAC or 12 VDC	E 256.2-24	36017391	53770 0			0.118	12
series/24 VAC or 12 VDC	E 255-24	36010842	53140 1			0.121	12
coil voltage U_c = 48 VAC or 24 VDC							
1 NO/48 VAC or 24 VDC	E 251-48	36010768	53060 2			0.114	12
2 NO/48 VAC or 24 VDC	E 252-48	36010818	53110 4			0.116	12
1 N + 1 NC/48 VAC or 24 VDC	E 256-48	36010909	53200 2			0.116	12
coil voltage U_c = 115 VAC or 48 VDC							
1 NO/115 VAC or 48 VDC	E 251-115	36017987	63090 6			0.114	12
2 NO/115 VAC or 48 VDC	E 252-115	36017995	63100 2			0.116	12
1 NO + 1 NC/115 VAC or 48 VDC	E 256-115	36017599	63020 3			0.116	12
coil voltage U_c = 60 VDC							
2 NO/60 VDC	E 252-60DC	36017581	63010 4			0.114	12
2 NO/60 VDC	E 252-220DC	36017573	63000 5			0.116	12
coil voltage U_c = 230 VAC or 115 VDC							
1 NO/230 VAC or 115 VDC	E 251-230	36010735	53030 5			0.114	12
2 NO/230 VAC or 115 VDC	E 252-230	36010784	53080 0			0.116	12
1 NO + 1 NC/230 VAC or 115 VDC	E 256-230	36010875	53170 8			0.116	12
1 CO/230 VAC or 115 VDC	E 256.1-230	36017359	53730 4			0.115	12
2 CO/230 VAC or 115 VDC	E 256.2-230	36017383	53760 1			0.118	12
series/230 VAC or 115 VDC	E 255-230	36010834	53130 2			0.121	12

Modular DIN Rail Components MDRC
Latching relays E 250

Selection table

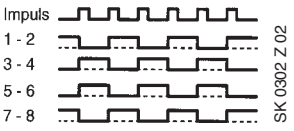
contacts/voltage	order details type code	order code	bbn 80 12542 EAN	price 1 piece	price group	w'ght 1 pc. kg	pack. unit pc.
coil voltage U_c = 12 VAC							
1 CO/12 VAC	E 257C001-12	36017425	54020 5			0.126	12
2 CO/12 VAC	E 257C002-12	36017458	54050 2			0.174	8
3 CO/12 VAC	E 257C003-12	36017565	54080 9			0.24	6
coil voltage U_c = 12 VAC or 6 VDC, central ON/OFF, same electr. potential							
1 NO/12 VAC or 6 VDC	E 257C10-12	36011139	53210 1			0.126	12
2 NO/12 VAC or 6 VDC	E 257C20-12	36011162	53240 8			0.174	8
3 NO/12 VAC or 6 VDC*	E 257C30-12	36016286	53480 8			0.24	6
coil voltage U_c = 24 VAC or 12 VDC							
1 CO/24 VAC or 12 VDC	E 257C001-24	36017417	54010 6			0.126	12
2 CO/24 VAC or 12 VDC	E 257C002-24	36017441	54040 3			0.174	8
3 CO/24 VAC or 12 VDC	E 257C003-24	36017557	54070 0			0.24	6
coil voltage U_c = 24 VAC or 12 VDC, central ON/OFF, same electr. potential							
1 NO/24 VAC or 12 VDC	E 257C10-24	36011154	53230 9			0.126	12
2 NO/24 VAC or 12 VDC	E 257C20-24	36011188	53260 6			0.174	8
3 NO/24 VAC or 12 VDC*	E 257C30-24	36016302	53500 3			0.24	6
coil voltage U_c = 230 VAC or 115 VDC							
1 CO/230 VAC or 115 VDC	E 257C001-230	36017409	54000 7			0.126	12
2 CO/230 VAC or 115 VDC	E 257C002-230	36017433	54030 4			0.174	8
3 CO/230 VAC or 115 VDC	E 257C003-230	36017540	54060 1			0.24	6
coil voltage U_c = 230 VAC or 115 VDC, central ON/OFF, same electr. potential							
1 NO/230 VAC or 115 VDC	E 257C10-230	36011147	53220 0			0.126	12
2 NO/230 VAC or 115 VDC	E 257C20-230	36011170	53250 7			0.174	8
3 NO/230 VAC or 115 VDC*	E 257C30-230	36016294	53490 7			0.24	6
Group module							
Group module	E 250-GM	36017029	537 007			0.033	12

* only 50 Hz

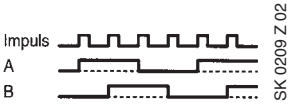
Selection table

contacts/voltage	order details type code	order code	bbn 80 12542 EAN	price 1 piece	price group	w'ght 1 pc. kg	pack. unit pc.
Additional components							
contact module 2NO multi voltage	E 250CM20	36014638	53460 0			0.100	10
contact module 1NO + 1NC multi voltage	E 250CM11	36014620	53450 1			0.100	10
contact module 2 CO multi voltage	E 250CM002	36014612	53440 2			0.100	10
central contact module	E 257CM	36016310	53510 2			0.100	16
central contact module	E 258C10-24/24	2CSM411000R0231	79010 5			0.228	6
central contact module	E 258C10-230/24	2CSM211000R0231	78910 9			0.229	6
central contact module	E 258C10-230/230	2CSM111000R0231	78920 8			0.236	6
central contact module	E 258C20-24/24	2CSM412000R0231	78930 7			0.237	6
central contact module	E 258C20-230/24	2CSM212000R0231	78830 0			0.238	6
central contact module	E 258C20-230/230	2CSM112000R0231	78840 9			0.246	6
central contact module	E 258C201-24/24	2CSM414000R0231	78940 6			0.244	6
central contact module	E 258C201-230/24	2CSM214000R0231	78850 8			0.244	6
central contact module	E 258C201-230/230	2CSM114000R0231	78860 7			0.250	6
central contact module	E 258C11-230/24	2CSM213000R0231	78870 6			0.235	6
central contact module	E 258C11-230/230	2CSM113000R0231	78880 5			0.243	6
central contact module	E 258C111-230/24	2CSM215000R0231	78890 4			0.242	6
central contact module	E 258C111-230/230	2CSM115000R0231	78900 0			0.247	6
central contact module	E 258C002-24/24	2CSM416000R0231	78950 5			0.252	6
central contact module	E 258C002-230/24	2CSM216000R0231	78960 4			0.253	6
central contact module	E 258C002-230/230	2CSM116000R0231	78970 3			0.260	6
central contact module	E 258C003-24/24	2CSM417000R0231	78980 2			0.259	6
central contact module	E 258C003-230/24	2CSM217000R0231	78990 1			0.259	6
central contact module	E 258C003-230/230	2CSM117000R0231	79000 6			0.265	6
auxiliary switches 1NO + 1NC	E 250H11	36014646	53470 9			0.100	16
auxiliary switches 2NO	E 250H20	36017011	53690 1			0.100	16
auxiliary switches 2NC	E 250H02	36017003	53680 2			0.100	16
compensator	E 250CP	36017037	53710 6			0.100	12

Wiring diagram E 25 …

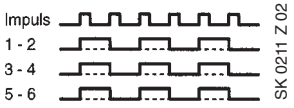


E 256 + E 250 CM 11



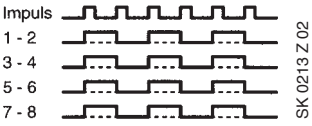
E 255

E 251, E 257 C 10 1 polig



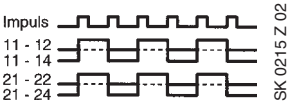
E 257 C 30 3 polig

E 252, E 257 C 20 2 polig



E 252 + E 250 CM 20 4 polig

E 256.1

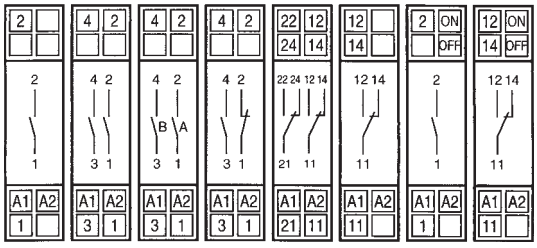


E 256.2

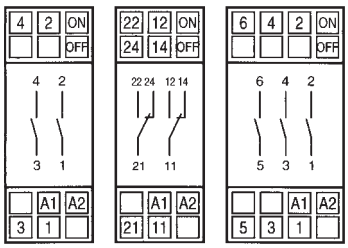
E 256

Modular DIN Rail Components MDRC
Latching relays E 250

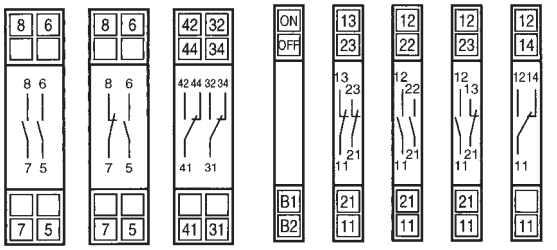
Terminal assignment



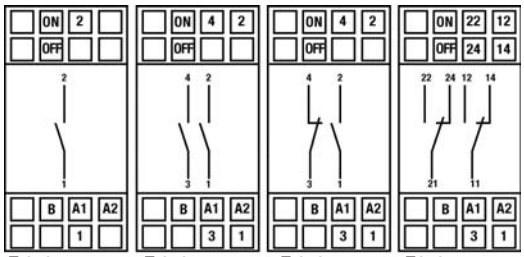
E 251 E 252 E 255 E 256 E 256.2 E 256.1 E 257 C 10 E 257 C 001



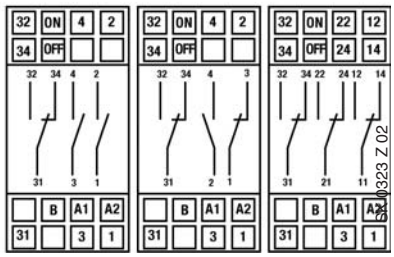
E 257 C 20 E 257 C 002 E 257 C 30



E 250- CM 20 E 250- CM 11 E 250- CM 002 E 257- CM E 250- H 02 E 250- H 20 E 250- H 11 E 250 H 001



E 258- C10 E 258- C20 E 258- C11 E258 C002



E 258- C201 E 258- C111 E 258- C003

Modular DIN Rail Components MDRC

Latching relays with control electronics

Devices for panel installation onto mounting rails (35 mm) according to DIN EN 60 715

mounting depth: 68 mm
mounting width: 1- and 2pole switches: 17.5 mm = 1 module
color: gray, RAL 7035

Installation instruction: do not install devices in the immediate vicinity of inductive loads.

Special features

- low switching noise
- long service life
- quick fastener as snap-on clip easily accessible, detachable from below
- compact design
- captive screws of the recessed/slotted head type, system Pozidriv size 1
- cross-wiring, coils and main connections
- safe connection ensured by box terminals
- protection against electric shock according to DIN VDE 0106 Part 100 (BGV A2)
- position is maintained in the case of a voltage drop

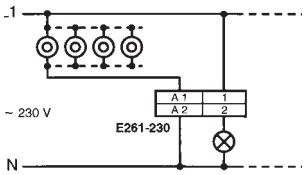
Technical Data

	E 260/E 260 C	E 261 SRV-230
short-circuit rupturing capacity:	8 A/250 VAC	16 A/250 VAC
load of filament lamps:	1000 W	1600 W
fluorescent lamp load in twin-lamp circuit:	1000 W	1000 W
fluorescent lamp load shunt compensated:	350 W	500 W
fluorescent lamp load inductive or capacitive:	500 W	1000 W
electronic ballast:	I_{on} ≤ 70 A/10 ms 1)	I_{on} ≤ 70 A/10 ms 1)
inductive load, cos φ = 0.6/230 V ~:	5 A	5 A
contact rating at DC:	100 W	100 W
minimum contact rating:	4 VAC/10 mA	4 VAC/10 mA
contact gap/contact material:	0.5 mm/Ag SnO_2	0.5 mm/Ag SnO_2
service life mechanical switchover at 10^3/h:	> 10^7	> 10^7
service life at rated load cos φ = 1 and 10^3/h:	> 10^5	> 10^5
service life with filament lamps 1000 W and 10^3/h:	> 10^5	> 10^5
service life at rated load cos φ = 0.6 and 10^3/h:	> 10^4	> 10^4
max. switching rate:	10^3/h	10^3/h
bounce time:	3 ms	
connection capacity:	2x1.5 mm² with connector sleeve 2x2.5 mm² without connector sleeve	
tightening torque:	0.5 … 0.8 Nm	0.5 … 0.8 Nm
ON duration at rated voltage ED:	100 %	100 %
coil voltage range:	0.9 to 1.1 Un	09. to 1.1 Un
minimum command time/interval between commands:	50/1000 ms	50 ms
ambient temperature:	– 20 °C/– 4°F to 50 °C/122°F	– 20 °C/– 4°F to 50 °C/122°F
control current when controlled locally:	230 VAC 115 mA, after 10s 8 mA ± 20 % 24 V UC 140 mA, after 10s 80 mA ± 20 %	
control current when controlled centrally:	230 VAC 8 mA, after 10s 3 mA ± 20 % 24 V UC 17 mA ± 20 %	
max. parallel capacitance of individual control wire at 230 V ~:	0.7 µF (ca. 2000 m)	
max. parallel capacitance der central control wire at 230 V ~:	0.2 µF (ca. 700 m)	
max. glow lamp current – parallel to 230 V control buttons:	10 mA	10 mA
max. induced voltage at 230 V control inputs:	0.2 U_n	120 V

1) max. switch-on pulse 1

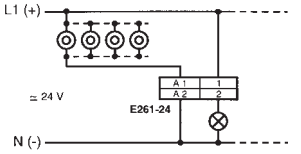
Connection examples

E 261-230



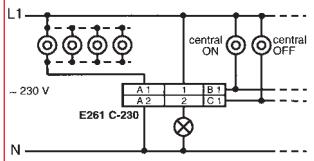
2CDC 052 087 F0003

E 261-24



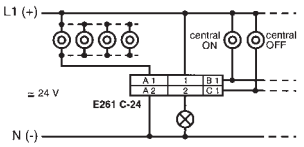
2CDC 052 086 F0003

E 261 C-230



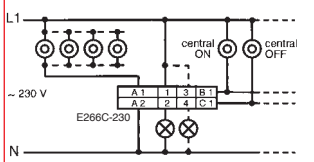
2CDC 052 089 F0203

E 261 C-24



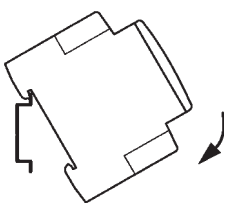
2CDC 052 088 F0203

E 266 C-230



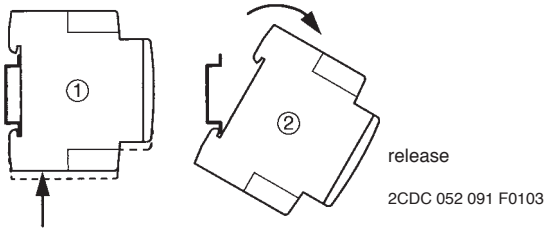
2CDC 052 092 F0203

E 260 C
Caution!
The same electr. potential must be applied to terminals A1, B1 and C1.



snap on

2CDC 052 066 F0103

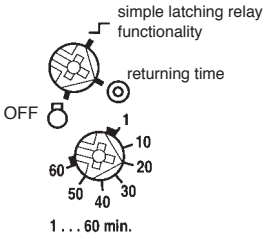


release

2CDC 052 091 F0103

2CDC 051 025 F0003

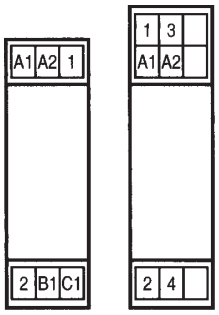
E 262 C-230



2CDC 052 093 F0003

E 261-SRV

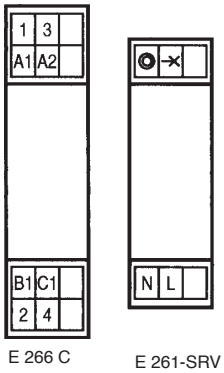
Terminal assignment



2CDC 052 054 F0003

E 261
E 261 C

E 266
E 262

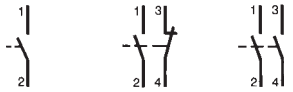


2CDC 052 055 F0003

E 266 C
E 262 C

E 261-SRV

wiring diagram



E 261- E 266 E 262

SK 0018 Z 92

Selection table

Latching relays with control electronics

contacts	power loss W [1]	order details type code	order code	bbn 40 16779 EAN	price 1 piece	price group	w'ght 1 pc. kg	pack. unit pc.
coil voltage U_C = 24 VAC/DC								
1 NO	2.4 (3.0)	E 261-24	GH E261 0100 R0024	57592 8			0.085	1
1 NO + 1 NC	2.4 (3.5)	E 266-24	GH E266 0110 R0024	57595 9			0.096	1
2 NO	2.4 (3.5)	E 262-24	GH E262 0200 R0024	57593 5			0.096	1
coil voltage U_C = 230 VAC								
1 NO	1.5 (2.0)	E 261-230	GH E261 0100 R0230	57596 6			0.085	1
1 NO + 1 NC	1.7 (3.6)	E 266-230	GH E266 0110 R0230	57598 0			0.096	1
2 NO	1.7 (3.6)	E 262-230	GH E262 0200 R0230	57597 3			0.096	1

Latching relays with returning time

Switches off automatically after expiry of preset delay time (1 to 60 min.) if the manual OFF command has not been received. Glow lamp current 50 mA.

coil voltage U_C = 230 VAC								
1 NO	1.5 (2.0)	E 261 SRV-230	GH E261 2100 R0230	48570 8			0.07	1

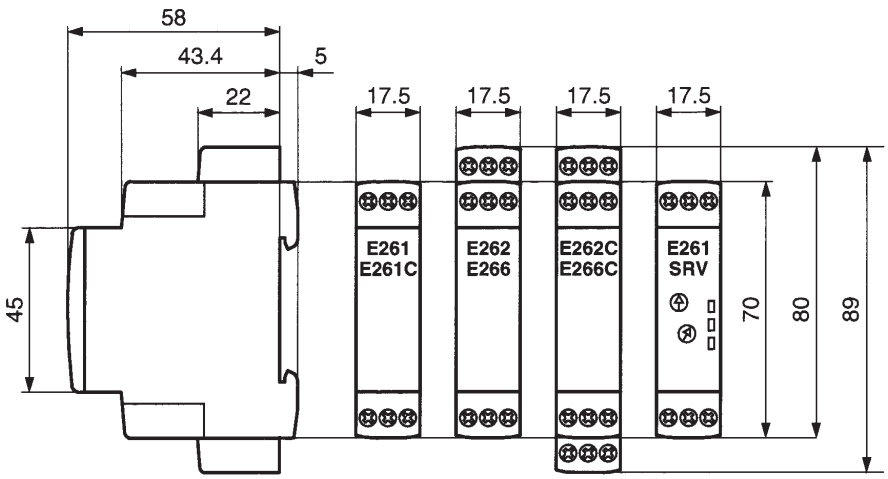
Latching relays with control electronics for central swtich ON/OFF

The central commands have always priority and reliably switch on/off any given number of devices connected in parallel, irrespective of their previous switching position. Local control inputs are blocked when a central command is received.

coil voltage U_C = 24 VAC/DC								
1 NO	2.4 (3.0)	E 261 C-24	GH E261 1100 R0024	57599 7			0.085	1
1 NO + 1 NC	2.4 (3.5)	E 266 C-24	GH E266 1110 R0024	57601 7			0.096	1
2 NO	2.4 (3.5)	E 262 C-24	GH E262 1200 R0024	57600 0			0.096	1
coil voltage U_C = 230 VAC								
1 NO	1.5 (2.0)	E 261 C-230	GH E261 1100 R0230	57602 4			0.085	1
1 NO + 1 NC	1.7 (3.0)	E 266 C-230	GH E266 1110 R0230	57604 8			0.096	1
2 NO	1.7 (3.0)	E 262 C-230	GH E262 1200 R0230	57603 1			0.096	1

[1] values in brackets indicate power loss when permanently excitated, rated voltage and rated contact loading.

Measurements in mm



2CDC 052 056 F0003

Installation relays of the E259 series are controlled by relatively low current. Devices of 1 or 3 phase distributions can be operated.

Irrespective of the rated voltage, installation relay E259 may be supplemented by contact module E259CM and/or auxiliary switch E250H (left side).

Technical Data

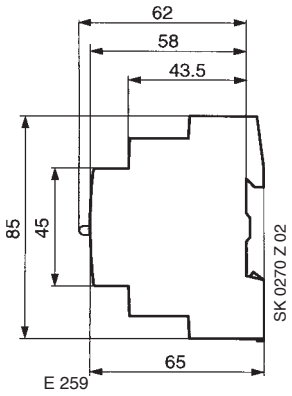
	E 259	E 259 1CO or 2CO
short-circuit rupturing capacity:	16A 250 VAC (1-/2-pole) 400 VAC (3-/4-pole)	16A 250 VAC (1-/2-pole) 400 VAC (3-/4-pole)
load of filament lamps:	1800 W	1800 W
fluorescent lamps in twin-lamp circuit:	1800 W	1800 W
fluorescent lamp load shunt compensated:	500 W	500 W
fluorescent lamp load uncorrected cos φ = 0.5:	900 W	900 W
electronic ballast:	I_{on} ≤ 140 A/10 ms	I_{on} ≤ 140 A/10 ms
HQL and HQI uncorrected:	500 W	500 W
max. load AC-1:		
motor:	3 kW	3 kW
with contact module E259CM:	8.5 kW	8.5 kW
max. load AC-5b:	1.8 kW	1.8 kW
max. load AC-7b:	0.9 kW	0.9 kW
max. load AC-3:	1.5 kW/230 VAC;	1.5 kW/230 VAC;
with contact module E259CM:	2.2 kW/400 VAC	2.2 kW/400 VAC
short-circuit protection (gL):	20 A	20 A
max. contact rating at DC:	3.3 W	4.2 W
min. contact loading per phase (under 5 V):	2 W	2 W
power consumption:		
hold	3.8 VA	4 VA
pick-up	4 VA	4 VA
contact gap/contact material:	3 mm/Ag Cd 015	3 mm/Ag Cd 015
service life mechanical;		
switchover at 10^3/h:	2 x 10^7	2 x 10^7
service life at rated load		
cos φ = 1 and 10^3/h:	3 x 10^5	4 x 10^5
max. switching rate:	10^3/h	10^3/h
closed time:		
NO contact	< 40 ms	< 40 ms
NC contact	< 20 ms	< 20 ms
contact parting time:		
NO contact	< 50 ms	< 50 ms
NC contact	< 50 ms	< 50 ms
bounce time:	< 10 ms	< 10 ms
connection capacity:	1.5 – 10 mm^2	1.5 – 10 mm^2
tightening torque:	0.8 Nm	0.8 Nm
ON duration ED*:	100 %	100 %
coil voltage range:	0.85 to 1.1 x U_n	0.85 to 1.1 x U_n
ambient temperature:	– 20 °C/– 4°F to 45 °C/113°F	– 20 °C/– 4°F to 45 °C/113°F
power loss of coils:	3.8 VA	4 VA
max. parallel capacitance:	0.06 µF	0.06 µF
max. glow lamp current:	5 mA	5 mA
max. induced voltage at control inputs:	0.2 x U_n	0.2 x U_n

* If the coil is constantly energised, ensure that there is adequate space around the latching relays in order not to exceed the ambient temperature

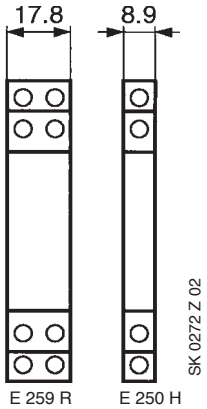
Selection table

contacts/voltage	order details type code	order code	bbn 80 12542 EAN	price 1 piece	price group	w'ght 1 pc. kg	pack. unit pc.
coil voltage U_c = 8 VAC							
1 NO/8 VAC	E 259 R10-8	36012319	53300 9			0.114	12
1 NO + 1 NC/8 VAC	E 259 R11-8	36012889	53340 5			0.116	12
2 NO/8 VAC	E 259 R20-8	36014372	53380 1			0.116	12
coil voltage U_c = 12 VAC or 6 VDC							
1 NO/12 VAC or 6 VDC	E 259 R10-12	36012285	53270 5			0.114	12
1 NO + 1 NC/12 VAC or 6 VDC	E 259 R11-12	36012855	53310 8			0.116	12
2 NO/12 VAC or 6 VDC	E 259 R20-12	36014349	53350 4			0.116	12
1 CO/12 VAC/DC	E 259 R001-12	36016930	53610 9			0.115	12
2 CO/12 VAC/DC	E 259 R002-12	36016963	53640 6			0.118	12
coil voltage U_c = 24 VAC or 12 VDC							
1 NO/24 VAC or 12 VDC	E 259 R10-24	36012301	53290 3			0.114	12
1 NO + 1 NC/24 VAC or 12 VDC	E 259 R11-24	36012871	53330 6			0.116	12
2 NO/24 VAC or 12 VDC	E 259 R20-24	36014364	53370 2			0.116	12
1 CO/24 VAC/DC	E 259 R001-24	36016955	53630 7			0.116	12
2 CO/24 VAC/DC	E 259 R002-24	36016989	53660 4			0.118	12
coil voltage U_c = 230 VAC or 115 VDC							
1 NO/230 VAC or 115 VDC	E 259 R10-230	36012293	53280 4			0.114	12
1 NO + 1 NC/230 VAC or 115 VDC	E 259 R11-230	36012863	53320 7			0.116	12
2 NO/230 VAC or 115 VDC	E 259 R20-230	36014356	53360 3			0.116	12
1 NO/230 VAC 60 Hz	E 259 R10-230 60Hz	36018001	63110 1			0.114	12
2 NO/230 VAC 60 Hz	E 259 R20-230 60Hz	36018019	63130 9			0.116	12
1 NO + 1 NC/230 VAC 60 Hz	E 259 R11-230 60Hz	36018027	63120 0			0.116	12
1 CO/230 VAC	E 259 R001-230	36016948	53620 8			0.115	12
2 CO/230 VAC	E 259 R002-230	36016971	53650 5			0.118	12
further coil voltages							
1 NO + 1 NC/48 VAC or 24 VDC	E 259 R11-48	36014562	53420 4			0.116	12
2 NO/48 VAC or 24 VDC	E 259 R20-48	36017607	65670 8			0.114	12
1 NO + 1 NC/115 VAC or 48 VDC	E 259 R11-115	36014547	53400 6			0.116	12
2 NO /115 VAC or 48 VDC	E 259 R20-115	36017615	65680 7			0.116	12
1 NO + 1 NC/60 VDC	E 259 R11-60DC	36014570	53430 3			0.116	12
2 NO/60 VDC	E 259 R20-60DC	36017623	65690 6			0.114	12
1 NO + 1 NC/110 VDC	E 259 R11-110DC	36014539	53390 0			0.116	12
1 NO + 1 NC/220 VDC	E 259 R11-220DC	36014554	53410 5			0.116	12
2 NO/220 VDC	E 259 R20-220DC	36017631	65700 2			0.116	12
additional components							
contact module 2 NC multi voltage	E 259CM20	36016658	53600 0			0.058	10
contact module 1 NO + 1 NC multi voltage	E 259CM11	36016641	53590 4			0.058	10
contact module 2CO multi voltage	E 259CM002	36016633	53580 5			0.059	10
auxiliary switches 1 NC + 1 NO	E 250H11	36014646	53470 9			0.033	16
auxiliary switches 2 NO	E 250H20	36017011	53690 1			0.033	16
auxiliary switches 2 NC	E 250H02	36017003	53680 2			0.033	16

Measurements in mm



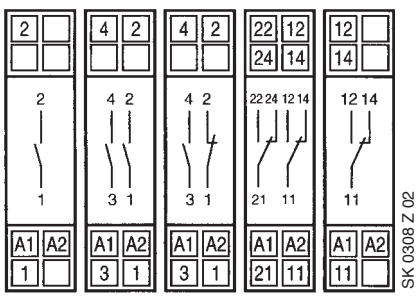
E 259



E 259 R
E 259 CM

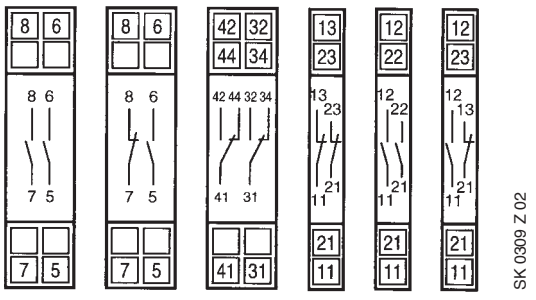
E 250 H

Terminal assignment



E 259 R 10 | E 259 R 20 | E 259 R 11 | E 259 R 002 | E 259 R 001

Terminal assignment additional components



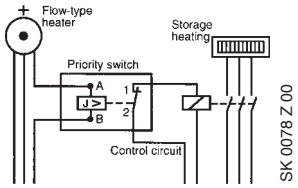
E 259 CM 20 | E 259 CM 11 | E 259 CM 002 | E 250 H 02 | E 250 H 20 | E 250 H 11

Modular DIN Rail Components MDRC

Priority switches E 450
(Load-shedding relays)

Devices for panel installation on mounting rails (35 mm) according to DIN EN 60 715, or on an even surface and fixed with screws.

mounting depth: 68 mm
mounting width: 17.5 mm = 1 module
color: gray, RAL 7035



SK 0078 Z 00

Application

The priority switch is used in wiring systems where existing lead cross sections or the size of the power supply service box do not allow for simultaneous operation of two powerful loads (e.g. storage heating and flow-type heater).

The priority switch disconnects the long-term load (storage heating) for as long as the short-term consumer (flow-type heater) is switched on.

The coil of the priority switch is connected in series to the short-term load. When this load is switched on, the NC contact of the priority switch disconnects e.g. the heating system contactor.

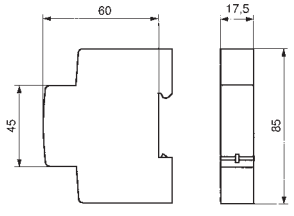
SK 0114 B 99

E 451-5.7 A

Technical Data

	E 451-5.7		E 452-5.7
Operating coil:			
range of rated current:		6.7 … 39 A	
– is:		1.5 … 9 kW at 230 V 4.6 … 27 kW at 230/400 V	
threshold current:		3.1 … 5.3 A	
OFF delay (max.):	0 main half waves		2 main half waves
max. continuous current:		43 A	
therm. continuous capacity at 40 °C/104 °F:		5 W	
contact assembly:			
control contact:		1 NC contact	
rated contact current at 250 V:		1 A	
contact material:		solid silver	
max. switching voltage:		400 V	
max. switching capacity:		230 VA	
max. switched current:		1 A	
max. inrush current peak:		5 A	
electr. service life:		> 10^5 operations	
mechanical service life:		ca. 2 x 10^6 operations	
max. electrical switching rate:		ca. 1800 operations/hour	
ON duration ED:		100 %	
ambient temperature:		– 20 °C/– 4 °F to + 40 °C/104 °F	
response time:		10 … 20 ms	
release time:	5 … 20 ms		≥ 20 ms
test voltage contact/coil:		2.5 kV	
clearance and creepage distance:		C/250 VAC cording to IEC 669-1-23	
degree of protection:		IP 40	
protection against electric shock:		according to DIN VDE 0106 Part 100 (BGV A2)	
terminal contact:		series coil up to 16 mm^2 control contact up to 2.5 mm^2	

Measurements in mm



E 451 …
E 452 …

SK 0029 Z 95

Selection table

for pneumatically controlled flow-type heaters

rated current range	power loss W	order details type code	order code	bbn 40 16779 EAN	price 1 piece	price group	w'ght 1 pc. kg	pack. unit pc.
6,7 ... 39 A	2.4	E 451- 5,7 A	GH V021 0451 R0013	41590 3			0.1	10

for electronically controlled flow-type heaters

6,7 ... 39 A	2.4	E 452-5,7 A	GH V021 0452 R0012	20950 2			0.1	10

2CDC 051 026 F0003

E 234 CT

Features of the new E 234 CT series

- 1 multi-functional and 5 single-functional devices
- wide input voltage A 1 – A 2, 24 – 240 VAC/24 – 48 VDC
- output contact 1 two-way switch
- 7 time ranges 0.05 – 100 h
- compact design
- non-isolated, parallel loadable control contacts
- U_L approval (pending)

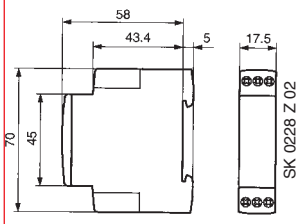
Technical Data

specification:		IEC 61812-1 10.1996, EN 61812, DIN VDE 0435 Part 2021
Input circuit		
supply voltage:	A1/A2	24...240 VAC/24...48 VDC – 15 %/+ 10 %
frequency:		50/60 Hz/DC
ON duration:		100 %
supply voltage indication:		LED green, flashes during timeout
control voltage:	Y1/A2	24...240 VAC/24...48 VDC – 15 %/+10 %
frequency:		50/60 Hz/DC
length of control pulse:		min. 20 ms
control current 24 V/230 V:		3 mA/4 mA
power consumption 24/230 V:		A 1/A 2 pick-up: 0.6 W/1.3 VA
		A 1/A 2 release: 0.4 W/1.0 VA
Output circuit		1 changeover contact
switching voltage:		max. 250 VAC
switched current:	AC12	8 A (230 VAC)
	DC12	8 A (24 VAC)
rated operational current:	AC15	3 A (230 VAC)
	DC13	2 A (24 VAC)
thermal current I_{th}:		5 A
incandescent and fluorescent lamps:		
– inductive and capactive		1000 W
fluorescent lamps in twin-lamp circuit:		4 x 65 W or max. 30 μF
fluorescent lamps shunt compensated:		4 x 65 W or max. 30 μF
electronic control gear:		$I_{on} \leq$ 70 A/10 ms
direct voltage:		60 W
minimum contact rating:		100 mA/12 V
mechanical service life:		30 mio. switching cycles
electrical service life 8A/250 VAC:		0.1 mio. switching cycles
fusing according to VDE 0660 Part 200:		NO contact: 10 A gL
		NC contact: 6 A gL
response time:		max. 10 ms
release time:		max. 10 ms
switching position indication:		LED red
ambient temperature:		– 20 °C/– 4 °F up to + 60 °C/140 °F
storage temperature:		– 40 °C/°F up to + 85 °C/185 °F
connection capacity:		2 x 1.5 mm² with connector sleeve
		2 x 2.5 mm² without connector sleeve
overvoltage category:		III according to EN 50178/VDE 0160/UL 508
pollution degree:		3 according to EN 50178/VDE 0160/UL 508
rated insultation voltage:		300 VACcording to IEC 50175/VDE 160/UL 508
test voltage		2.5 kV/50 Hz/1 min.
Time		
time ranges:		1s, 10s, 100s, 10min, 100min, 10h, 100h
setting accuracy:		10 % of the upper range value
time out within		
– supply voltage:		m 0.5 %
– temperature ranges:		m 0.06 %/°K
recovery time:		< 50 ms
repeat accuracy:		± 0.5 %
glow lamps and shunt compensated fluorescent lamps parallel to control pushbuttons:		not permissible
max. parallel capacitance of control cable:	A 1/A2	200 m/60 nF
	Y 1/A2	100 m/30 nF

2CDC 051 026 F0003

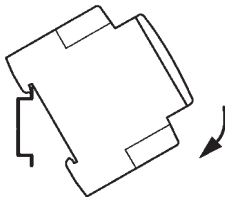
E 234 CT

measurements in mm



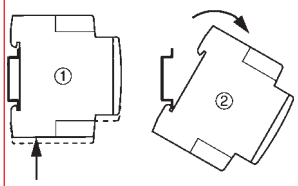
SK 0228 Z 02

E 234 CT...



2CDC 052 066 F0103

snap-on

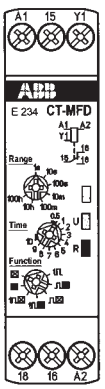


release

2CDC 052 091 F0103

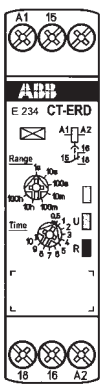
contact	power loss W	order details type code	order code	bbn 40 13614 EAN	price 1 piece	price group	w'ght 1 pc. kg	pack. unit pc.
multifunction time-delay relay offering the following functions AV, RV, EW, AW, BI, BP, IF								
1 CO	2.5	E 234 CT-MFD	1NC VR50 0020 R0000	35063 4			0.06	1
time-delay relays pick-up delays AV								
1 CO	2.5	E 234 CT-ERD	1NC VR50 0100 R0000	35065 8			0.06	1
time-delay relays time-delayed after de-energization with auxiliary supply RV								
1 CO	2.5	E 234 CT-AHD	1NC VR50 0110 R0000	35066 5			0.06	1
time-delay relays passing make contact EW								
1 CO	2.5	E 234 CT-VWD	1NC VR50 0130 R0000	35067 2			0.06	1
time-delay relays flashing pulse-starting BI								
1 CO	2.5	E 234 CT-EBD	1NC VR50 0150 R0000	35068 9			0.06	1
time-delay relays clock-pulse, no-pulse-starting TG (2 different times selectable)								
1 CO	2.5	E 234 CT-TGD	1NC VR50 0160 R0000	35069 6			0.06	1

Front sides



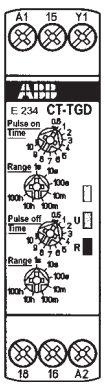
SK 0231 Z 02

E 234 CT-MFD



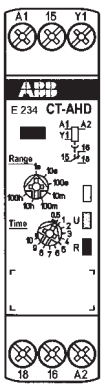
SK 0232 Z 02

E 234 CT-ERD



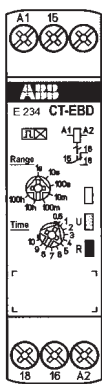
SK 0246 Z 02

E 234 CT-TGD



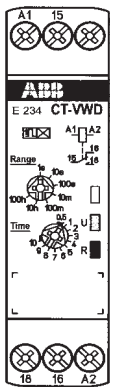
SK 0234 Z 02

E 234 CT-AHD



SK 0233 Z 02

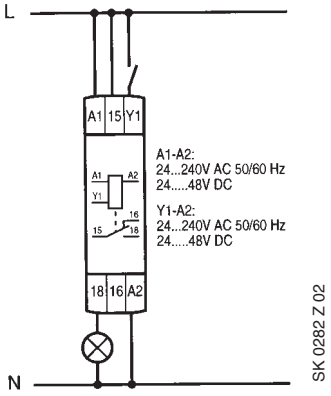
E 234 CT-EBD



SK 0230 Z 02

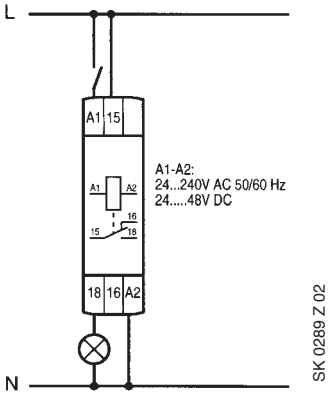
E 234 CT-VWD

Connection example E 234 CT



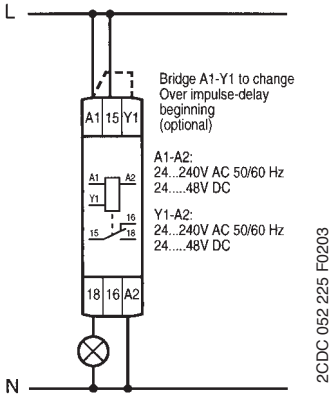
SK 0282 Z 02

E 234 CT-MFD
-AHD



SK 0289 Z 02

E 234 CT-ERD
-VWD
-EBD



2CDC 052 225 F0203

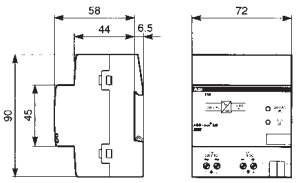
E 234 CT-TGD

Modular DIN Rail Components MDRC
Power supply units
Recessed bells

SK 0163 B 00

NT/S 12.1600

measurements in mm

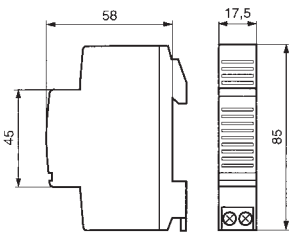


SK 0273 Z 02

SK 0072 B 98

SM 1/230

measurements in mm



SM 1

SK 0196 Z 99

Power supply units

Two universally applicable power supply units for auxiliary power supply in SELV applications. The compact devices of the pro *M* design have a regulated output voltage of 12 VDC or 24 VDC with a maximum output current of 1.6 A or 0.8 A. The devices are protected against overload and the output is steady-short-circuit-proof. The status of the supply voltage and the output voltage is indicated by 2 LEDs. Connection is made with screw clamps.

Technical Data

Supply:	
rated voltage:	230 V/AC (+ 10/– 15 %), 50 … 60 Hz
power consumption:	max. 30 VA
Output:	
rated voltage:	12 VDC or, as the case may be, 24 VDC (±1 %), SELV
ripple voltage:	max. 0.15 Vss
rated current:	1.6 A or 0.8 A, steady-short-circuit-proof
current limitation:	12 VDC max. 2.2 A 24 VDC max. 1.1 A
power loss:	max. 5 W
Operating and indication elements:	
2 LEDs green:	state of 230 VAC supply and DC output voltage
degree of protection:	IP 20 according to EN 60 529
operating temperature range:	– 5 °C/23 °F to + 45 °C/113 °F
connection:	clamp screws, connection capacity 0.2 – 2.5 mm²
installation:	on mounting rails 35 mm, DIN EN 60 715

Selection table

designation	order details		bbn 40 16779 EAN	price 1 piece	price group	w'ght 1 pc. kg	pack. unit pc.
rated output voltage/current	type code	order code					
12 VDC 1.6 A	NT/S 12.1600	GH Q605 0056 R0002	51467 5			0.2	1
24 VDC 0.8 A	NT/S 24.800	GH Q605 0057 R0002	51468 2			0.2	1

Modular bell

Devices for panel installation onto mounting rails (35 mm) according to DIN EN 60 715

mounting depth:	68 mm
mounting width:	17.5 mm = 1 module
color:	gray, RAL 7035

Application

The modular bell gives acoustic signals in building installations.

Technical Data

rated voltage:	12 VAC and 230 VAC 50 Hz
sound level:	ca. 80 dB A
ambient temperature:	– 5 °C/23 °F to + 50 °C/122 °F
connection capacity:	up to 1 x 6 mm² or 2 x 2.5 mm²

Selection table

designation	power loss	order details		bbn 80 12542 EAN	price 1 piece	price group	w'ght 1 pc. kg	pack. unit pc.
	W	type code	order code					
modular bell 230 V*	5.5	SM 1/230	16014265	32630 4			0.125	12
modular bell 12 V*	3.6	SM 1/12	16014257	32620 5			0.125	12

* not suitable for permanent operation

TS 8/12 SW

Devices for panel installation onto mounting rails (35 mm) according to DIN EN 60 715

mounting depth: 68 mm
mounting width: 8/16 VA: 35 mm = 2 modules
24 VA: 52 mm = 3 modules
color: gray, RAL 7035

These transformers with secondary in very low safety voltage for feeding bells (discontinuous use) are available in 4 series:

- failure proof (TM series)
- short-circuit proof not by construction (TS8 series)
- short-circuit proof not by construction with switch 0-1 (TS8/SW series)
- short-circuit proof not by construction (TS16/TS24 series)

Application

For the supply of bell, chime, intercom, buzzer and door opener systems as well as for alarm and signaling systems with protective extra-low voltage. Bell transformers are designed for short-term loads only.

Technical data

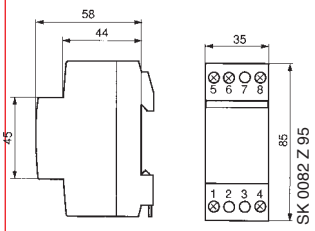
rated input voltage:	230 VAC 50 Hz/60 Hz
rated output voltage:	8, 12 or 24 VAC and 4-6-8 VAC, 4-8-12 VAC, 8-12-24 VAC
rated output power:	8 VA, 16 VA, 24 VA (TS); 10, 15, 30, 40 (TM)
rated output current (max.):	0.33; 0.67; 1; 1.33; 2 A
no-load output voltage:	max. 33 V
class of protection:	total insulation
degree of protection:	IP 20
protection against electric shock:	according to DIN VDE 0106 Part 100 (BGV A2)
rated/ambient temperature:	t_a40/E (+ 40 °C/104°F at place of installation)
connection capacity:	up to 10 mm^2
power loss:	1 … 4 W

Selection table

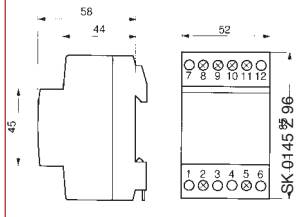
rated voltage/current		order details		bbn 80 12542 EAN	price 1 piece	price group	w'ght 1 pc. kg	pack. unit pc.
input	output	type code	order code					
bell transformers								
230 V	8 V/1 A	TS 8/8	16012699	36800 7			0.355	6
230 V	8 V/1 A	TS 8/8 sw*	16012723	36830 4			0.277	6
230 V	12 V/0.67 A	TS 8/12	16012707	36810 6			0.355	6
230 V	12 V/0.67 A	TS 8/12 sw*	16012731	36840 3			0.277	6
230 V	4-6-8 V/1 A	TS 8/4-6-8 sw*	16012756	36860 1			0.280	6
230 V	4-8-12 V/0.67 A	TS 8/4-8-12 sw*	16012764	36870 0			0.280	6
230 V	24 V/0.33 A	TS 8/24	16012715	36820 5			0.355	6
230 V	24 V/0.33 A	TS 8/24 sw*	16012749	36850 2			0.277	6
230 V	8 V/2 A	TS 16/8	16012772	36880 9			0.355	6
230 V	12 V/1.33 A	TS 16/12	16012780	36890 8			0.355	6
230 V	24 V/0.67 A	TS 16/24	16012798	36900 4			0.330	6
230 V	4-6-8 V/2 A	TS 16/4-6-8	16012806	36910 3			0.333	6
230 V	4-8-12 V/1.33 A	TS 16/4-8-12	16012814	36920 2			0.333	6
230 V	4-8-12 V/2 A	TS 24/4-8-12	16012822	36930 1			0.465	4
230 V	8-12-24 V/1 A	TS 24/8-12-24	16012830	36940 0			0.465	4
230 V	4-8-12 V	TM 10/12	16012608	36710 9			0.3	1
230 V	12-24 V	TM 10/24	16012616	36720 8			0.3	1
230 V	4-8-12 V	TM 15/12	16012624	36730 7			0.3	1
230 V	12-24 V	TM 15/24	16012632	36740 6			0.3	1
230 V	4-8-12 V	TM 30/12	16012640	36750 5			0.45	1
230 V	12-24 V	TM 30/24	16012657	36760 4			0.45	1
230 V	4-8-12 V	TM 40/12	16012665	36770 3			0.45	1
230 V	12-24 V	TM 40/24	16012673	36780 2			0.45	1

* sw = with ON/OFF switch

measurements in mm



TS 8/…
TS 16/…
TM 10/...
TM 15/...



TS 24/…
TM 30/…

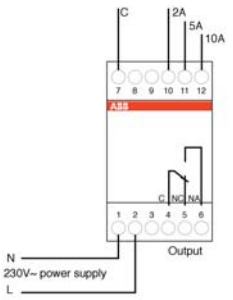
TS 24/…

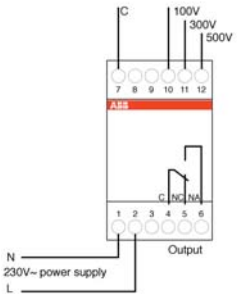
SK 0129 B 00

E 236-US 1

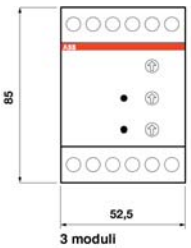
SK 0130 B 00

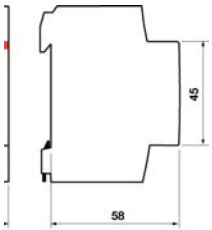
E 236-US 2





measurements in mm



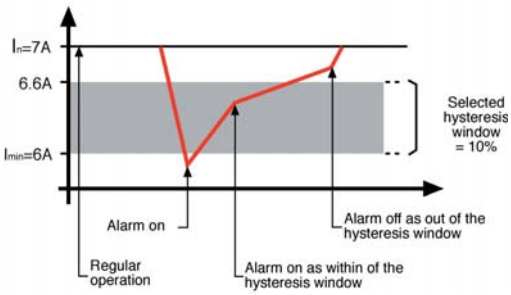


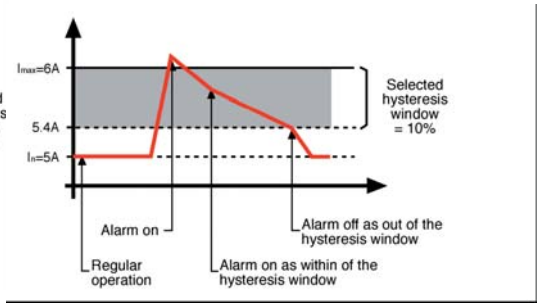
These devices are used to measure current (ammetric) and voltage (voltmetric) on single-phase electric networks for a perfect protection of devices used.
The range includes:
- maximum current (RHI) and maximum voltage (RHV) relay. The control relay remains picked up as long as the quantity to be measured is lower than the set threshold value;
- minimum current (RLI) and minimum voltage (RLV) relay. The control relay remains picked up as long as the quantity to be measured is higher than the set threshold value.

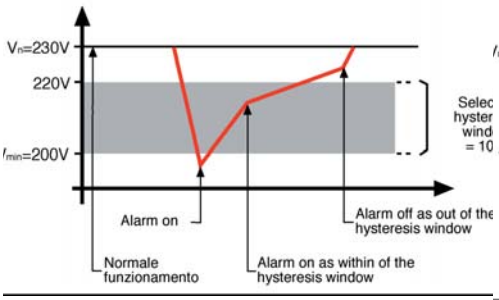
In both cases the relay drops out with a delay adjustable by the potentiometer, which also allows to adjust hysteresis (from 1 to 45%).

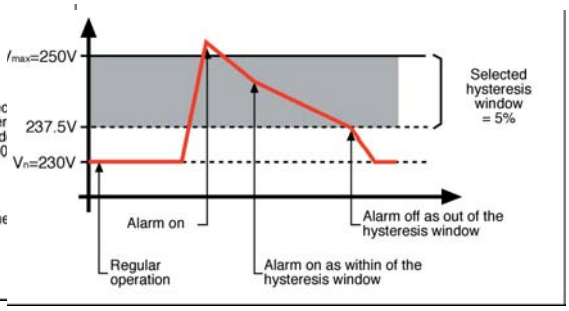
Technical Data

rated voltage:	230 VAC
rated frequency:	50/60 Hz
switching contact capacity:	16 A
ammetric relay alarm thresholds:	2, 5, 10 A
voltmetric relay alarm thresholds:	100, 300, 500 A
adjustable calibration of In and Vn%:	30 to 100 %
adjustable hysteresis value:	1 to 45 %
time delay:	1 to 30 s
power consumption:	2 W
modules:	2









Selection table

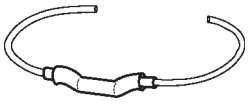
	power loss	order details		bbn 40 16779 EAN	price 1 piece	price group	w'ght 1 pc. kg	pack. unit pc.
	W	type code	order code					
Max. current ammetric relay	2	RHI	16075993	334309			0.3	1
Max. voltage voltmetric relay	2	RHV	16075977	334101			0.3	1
Min. current ammetric relay	2	RLI	16075985	334200			0.3	1
Min. voltage voltmetric relay	2	RLV	16075969	334002			0.3	1

SK 0171 B 02

E 235-NFS

SK 0172 B 02

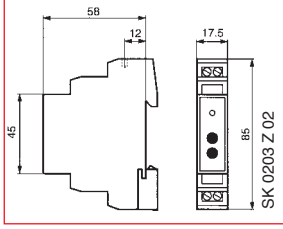
E 235-GLA



SK 0202 Z 02

E 235-GLE

dimensions



SK 0203 Z 02

Constant exposure of electrical interference fields originating from live conductors - as is the case e.g. in bedrooms - may impair the well-being of people, experts say.

The E235-NFNC mains disconnection relays de-energize supply conductors to which no loads are applied.

An ac extra-low voltage helps the mains disconnection relay to recognize whether a load is switched on, whereupon the supply voltage goes on again. The ac extra-low voltage makes it possible to identify induced and capacitive loads correctly.

The connection is re-established if the load exceeds the preset making capacity of the mains disconnection relay.
The disconnection is made when the load falls below a value equivalent to 2/3 of the preset making capacity. The integrat ed LED visualises the making position. Use the rotary switch to choose between “automatic monitoring” or “permanent ON”.

With the extra base load adapter E235-GLA, the mains disconnection relays can be switched on manually.
It is plugged into a socket-outlet that is controlled by the disconnection relay. The toggle switch switches the base load through which the mains disconnection relay is activated. This can be necessary in the case of loads with electronic power controllers, such as the dimming of lamps, speed controllers of vacuum cleaners, drilling machines, etc., because these may not be able to activate the mains disconnection relay.

The control lamp of the adapter indicates, irrespective of the position of the toggle switch, the supply voltage applied. Thus, it is possible to see whether the supply voltage has been switched off or whether other loads are still applied.

For the permanent installation of loads that switch on independently of the supply voltage, such as fluorescent lamps, a E235-GLE PTC base load element is available.

If a dimmer is to be connected to the output of the mains disconnection relay, it must have an additional switching contact through which a base load element is switched.

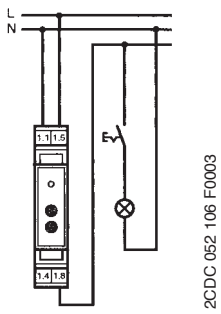
Technical Data

short-circuit rupturing capacity:	16 A/230 VAC
rated frequency:	50/60 Hz
range of control voltage:	0.9 to 1.1 U_n
load of filament lamps:	2300 W
fluorescent lamp load:	
– twin-lamp circuit:	1000 W
– shunt compensated:	56 W
– electronic ballast:	max. 36 W, dependent on manufacturer
induced load:	6 A cos φ = 0.6
max. switching capacity (cos φ 0.5):	3500 VA
intrinsic consumption:	ca. 1W
control voltage:	5 VAC
making capacity, adjustable:	2 – 15 VA
breaking capacity:	0.66 x making capacity
ON delay:	50 ms
OFF delay:	ca. 3 sec.
contact assembly:	1 NO contact
service life at rated load:	> 100.000 switching cycles
ambient temperature:	– 10 °C/14 °F to + 45 °C/113 °F
connection capacity (clamping terminal):	max. 2.5 mm²

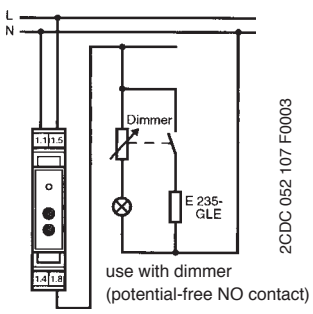
Selection table

description	order details		bbn 40 16779 EAN	price 1 piece	price group	w'ght 1 piece kg	pack. unit piece
	type code	order code					
mains disconnection relay	E 235-NFS	GH E235 1001 R0010	57182 1		12	0.065	1
base laod element	E 235-GLE	GH V0220 868 R0010	57181 4		12	0.001	1
base load adapter	E 235-GLA	GH V0220 868 R0011	57186 9		12	0.070	1

wiring diagram



2CDC 052 106 F0003



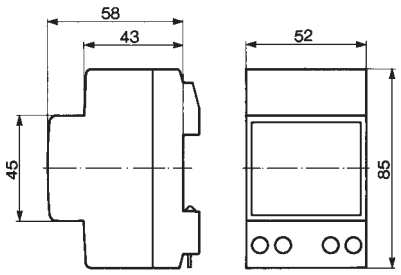
use with dimmer
(potential-free NO contact)

2CDC 052 107 F0003

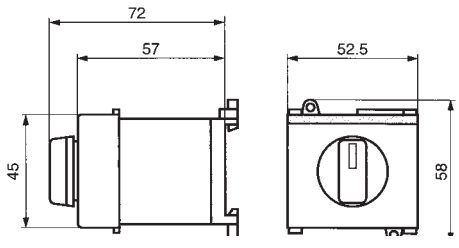
Technical Data

	measuring instruments with analog display VLM and AMT	measuring instruments with digital display
measuring element:	moving iron	electronic
accuracy:	class 1.5	class 0.5
overrange:	20 % in relation to rated current and rated voltage	–
intrinsic consumption:	voltmeter 300 V: 1.7 VA, 500 V: 2.4 VA current meter 5 A: 0.4 VA, 10 A: 0.6 VA, 25 A: 1.0 VA, 30 A: 1.2 VA	0.9 – 1.5 VA
supply voltage:		230 VAC
frequency response range:	50 ... 60 Hz	50 ... 60 Hz
test voltage:	2000 V	2000 V
ambient temperature:	within accuracy class: 20 °C/68 °F ± 10 °C/14 °F otherwise: – 25 °C/77 °F to +75 °C/167 °F	– 10 °C/14 °F to + 55 °C/131 °F
degree of protection:	IP 20	IP 20
casing material:	plastic, self-extinguishing (class V0 according to UL 94)	plastic self-extinguishing (class V0 according to UL 94)
color:	gray, RAL 7035	gray, RAL 7035
mounting position:	vertical	or horizontal
terminals:	box terminals up to 10 mm²	box terminals up to 10 mm²
effective ranges: voltage	300 V, 500 VAC (direct measurement)	VLMD-1-2: 600 VAC/DC (direct measurement)
current	5-10-15-20-25 and 30 A (direct measurement)	
frequency		FRZ-DIG: 40 … 80 Hz
for transformer connection	.../5 A 5-10-20-30-50-75-80-100-150-200-250-300-400-500-600-800-1000-1250 and 1500 A	.../5 A, codeable: AMTD-1: 15-20-25-40-60-99,9-150-200-250-400-600, 999 A AMTD-2: 15-20-25-40-60-99,9-150-200-250-400-600, 999 A
scales:	upper range values according to DIN 43 701	
division and needle:	according to DIN 43 802	

Measurements in mm

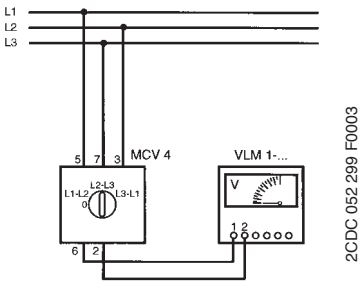


built-in measuring instruments SK 0191 Z 91



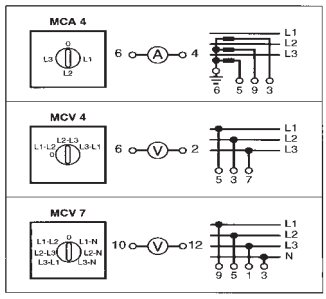
changeover switches 2CDC 052 297 F0003

Wiring diagrams



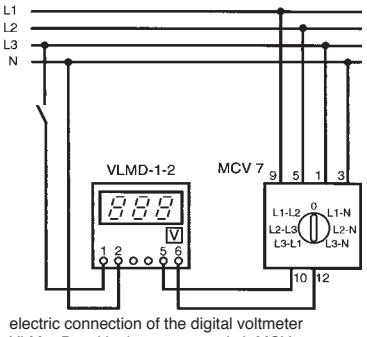
2CDC 052 299 F0003

electric connection of the analog voltmeter VLM 1 with changeover switch MCV 4



2CDC 052 301 F0003

electric connection of the analog ammeter AMT for transformer measurement with changeover switch MCA 4



2CDC 052 305 F0003

electric connection of the digital voltmeter VLM 1-D1 with changeover switch MCV 7

SK 058 B 00

VLM 1-300

SK 0116 B 99

AMT 1/

Selection table

Measuring instruments with analog display, class 1.5

effective range 0 – ...	power loss W	order details type code	order code	bbn 80 12542 EAN	price 1 piece	price group	w'ght 1 pc. kg	pack. unit pc.
moving-iron measuring instruments for alternating voltages (direct measurement)								
300 VAC	4	VLM 1/300	16070515	007906			0.2	1
500 VAC	4	VLM 1/500	16070523	000006			0.2	1
100 VAC	4	VLM 2/100	16070713	008002			0.2	1
300 VAC	4	VLM 2/300	16070721	008101			0.2	1
moving-iron measuring instruments for alternating currents (direct measurement)								
transformer connection 5 A	1.2	AMT 1/A5	16071083	000808			0.2	1
5 A	1.2	AMT 1/5	16070598	000709			0.2	1
10 A	1.2	AMT 1/10	16070531	000105			0.2	1
15 A	1.2	AMT 1/15	16070549	000204			0.2	1
20 A	1.2	AMT 1/20	16070556	000303			0.2	1
25 A	1.2	AMT 1/25	16070564	000402			0.2	1
30 A	1.2	AMT 1/30	16070572	000501			0.2	1
10 mA	1.2	AMT2/0.01	16071380	028307			0.2	1
100 mA	1.2	AMT2/0.1	16071398	028406			0.2	1
1 A	1.2	AMT2/1	16071406	028505			0.2	1
5 A	1.2	AMT2/5	16070739	028604			0.2	1
10 A	1.2	AMT2/10	16070747	028703			0.2	1
15 A	1.2	AMT2/15	16070754	028802			0.2	1
20 A	1.2	AMT2/20	16070762	028901			0.2	1
25 A	1.2	AMT2/25	16070770	029007			0.2	1
30 A	1.2	AMT2/30	16070788	029106			0.2	1
moving-iron instruments for direct currents (shunt measurements)								
shunt connection ../60 mV	1.2	AMT 2	16070812	029205			0..2	1
moving-iron measuring instruments for alternating currents (transformer measurement)								
transformer connection 5 A		AMT 1/A1	16070580	00060 0			0..2	1
exchangeable scales for ammeter AMT 1/A1								
5/5 A	-	SCL 1/5	16070614	001201			0.10	1
10/5 A	-	SCL 1/10	16070622	001300			0.10	1
20/5 A	-	SCL 1/20	16070630	001409			0.10	1
25/5 A	-	SCL 1/25	16071711	030706			0.10	1
30/5 A	-	SCL 1/30	16070648	001508			0.10	1
50/5 A	-	SCL 1/40	16071729	030805			0.10	1
50/5 A	-	SCL 1/50	16070655	001607			0.10	1
5/5 A	-	SCL 1/60	16071737	030904			0.10	1
75/5 A	-	SCL 1/75	16071067	031000			0.10	1
80/5 A	-	SCL 1/80	16070663	001706			0.10	1
100/5 A	-	SCL 1/100	16070671	001805			0.10	1
150/5 A	-	SCL 1/150	16070689	001904			0.10	1
200/5 A	-	SCL 1/200	16070697	002000			0.10	1
250/5 A	-	SCL 1/250	16070481	031109			0.10	1
300/5 A	-	SCL 1/300	16070705	002109			0.10	1
400/5 A	-	SCL 1/400	16070838	002208			0.10	1
500/5 A	-	SCL 1/500	16070846	002307			0.10	1
600/5 A	-	SCL 1/600	16071745	031208			0.10	1
800/5 A	-	SCL 1/800	16070853	002406			0.10	1
1000/5 A	-	SCL 1/1000	16070861	002505			0.10	1
1500/5 A	-	SCL 1/1500	16075480	274711			0.10	1
2000/5 A	-	SCL 1/2000	16075498	274810			0.10	1
2500/5 A	-	SCL 1/2500	16075506	274919			0.10	1
exchangeable scales for ammeter AMT 1/A5								
5/5 A	-	SCL 1/A5/5	16070879	031314			0.10	1
10/5 A	-	SCL 1/A5/10	16070887	031413			0.10	1
20/5 A	-	SCL 1/A5/20	16070895	031512			0.10	1
30/5 A	-	SCL 1/A5/30	16070903	031611			0.10	1
50/5 A	-	SCL 1/A5/50	16071091	031710			0.10	1
80/5 A	-	SCL 1/A5/80	16071109	031819			0.10	1
100/5 A	-	SCL 1/A5/100	16071190	031918			0.10	1
150/5 A	-	SCL 1/A5/150	16071208	032014			0.10	1

Selection table

effective range 0 – ...	power loss W	order details type code	order code	bbn 80 12542 EAN	price 1 piece	price group	w'ght 1 pc. kg	pack. unit pc.
exchangeable scales for ammeter AMT 2								
5/60mV	-	SCL 2/5	16070820	032106			0.10	1
6/60mV	-	SCL 2/6	16070796	032205			0.10	1
10/60mV	-	SCL 2/10	16070804	032304			0.10	1
20/60mV	-	SCL 2/20	16071497	032403			0.10	1
30/60mV	-	SCL 2/30	16071505	032502			0.10	1
50/60mV	-	SCL 2/50	16071935	032601			0.10	1
80/60mV	-	SCL 2/80	16071943	032700			0.10	1
100/60mV	-	SCL 2/100	16071950	032809			0.10	1
150/60mV	-	SCL 2/150	16071968	032908			0.10	1
200/60mV	-	SCL 2/200	16071976	033004			0.10	1
250/60mV	-	SCL 2/250	16071984	033103			0.10	1
300/60mV	-	SCL 2/300	16071992	033230			0.10	1
400/60mV	-	SCL 2/400	16071026	033301			0.10	1
500/60mV	-	SCL 2/500	16071034	033400			0.10	1

Measuring instruments with digital display, class 0.5

measuring instrument for alternating or direct voltage (direct measurement)

600 VAC/DC	2.0	VLMD-1-2	16076553	62040 2			0.300	1

measuring instrument for alternating voltage with setting button for different effective ranges (transformer measurement 5A)

15-20-25-40-60-99.9-150-200 250-400-600-999 A	2.0	AMTD-1	16076561	62050 1			0.300	1

measuring instrument for alternating voltage with setting button for different effective ranges (transformer measurement 5A)

15-20-25-40-60-99.9-150-200 250-400-600-999 A	2.0	AMTD-2	16076579	62060 0			0.300	1

measuring instrument for frequencies (direct measurement)

40 … 80 Hz	2.0	FRZ-DIG	16076587	62070 9			0.300	1

MTM multimeters

These instruments allow the measurement of the main electric quantities in three-phase networks at 230/400 VAC, grouping in a single instrument the functions of voltmeters, ammeters, power factor meters, wattmeters, varmeters, frequency meters and thermometers. The MTME multimeter detects also active and reactive energy. Being more practical than that of multiple different instruments, the use of these instruments is less difficult referring to the managing of dimensions and to the wiring, and more convenient.
The 30 measurable quantities are viewed by the four red LED displays, which guarantee the simultaneous reading of multiple values along with a good legibility.
In addition to instantaneous measured quantities (in effective value), it is possible for some of them to view the average and the maximum peak as well.

modular multimeter for measurement at 230/400 VAC and accessories

-	<3	MTM	16076165	371908			0.450	1
-	<3	MTME	16011402	333401			0.450	1
-	<3	MTME-I	16011410	333500			0.450	1
-	<3	MTME-485	16011428	333609			0.450	1
-	<3	CDI	16011436	333708			0.50	1
-	<3	CUS	16011444	333807			0.50	1
-	<3	SW01	16011451	333906			0.50	1

Changeover switches

rated operational voltage: 660 VAC
rated current I_{th}: 25 A
service life mechanical: 10^6
ambient temperature: – 20 °C to + 50 °C
cross section 2 x 2,5 mm² or 1 x 4 mm²

voltmeter changeover switches

L1, L2, L3	0.5	MCV 4	1SCA 022 404 R4740	52249 6			0.095	1
L1, L2, L3, N	0.5	MCV 7	1SCA 022 647 R7840	52243 8			0.110	1

ammeter changeover switches

0-1-2-3	0.5	MCA 4	1SCA 022 404 R4820	52245 2			0.110	1

SK 0120 B 99

E 233-230

Devices for panel installation onto mounting rails (35 mm) according to DIN EN 60 715

mounting depth: 68 mm for E233, 58 mm for HTM
mounting width: 17.5 mm = 1 module for E233, 35 mm 0 2 modules for HTM
color: gray, RAL 7035

Application

Elapsed-time meters are used to record operating times as well as to determine idle times and off times of industrial machinery and plant, for commercial purposes or in domestic installations. Offers no reset functionality.

Technical data

	AC equipment	DC equipment
rated voltage:	50 Hz: 24 V, 110 V, 230 V 60 Hz: 24 V, 120 V, 240 V*	DC 12 V ... 48 V
voltage tolerance:	+ 6% – 10 %	± 10 %
power consumption:	1.5 VA	ca. 20 mW
ambient temperature:	– 15 °C/5 °F... + 50 °C/122 °F	– 10 °C/14 °F ... + 50 °C/122 °F
counting capacity:	100 000 h	100 000 h
reading accuracy:	0.01 h	0.1 h
operation display:	fast running	LED display
protection against electric shock:	according to DIN VDE 0106 Part 100 (BGV A2)	according to DIN VDE 0106 Part 100 (BGV A2)
connection capacity:	up to 10 mm^2	up to 10 mm^2

Selection table

rated voltage	order details type code	order code	bbn 4012233 EAN	price 1 pc.	price group	w'ght 1 pc. kg	pack. unit piece
AC 230 V/50 Hz	E 233-230	GH E233 1001 R0006	63000 4			0.05	10
AC 24 V/50 Hz	E 233-24	GH E233 1001 R0001	63010 3			0.05	10
DC 12 V ... 48 V	E 233-12/48	GH E233 1001 R0004	63020 2			0.05	10
AC 240 V/60 Hz	E 233-240/60 Hz*	GH E233 1001 R6005	36590 1 [1]			0.05	10
AC 120 V/60 Hz	E 233-120/60 Hz*	GH E233 1001 R5005	36600 7 [1]			0.05	10
AC 24 V/60 Hz	E 233- 24/60 Hz*	GH E233 1001 R5001	36610 6 [1]			0.05	10
AC 24 V/50 Hz	HMT 1/24	16074012	030300			0.2	6
AC 110 V/50 Hz	HMT 1/110	16074020	030409			0.2	6
Ac 230 V/50 Hz	HMT 1/230	16074038	030508			0.2	6
AC 230 V/50 Hz	HMT 11	16071075	030607			0.2	1

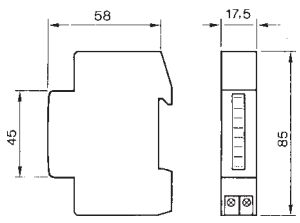
Other rated voltages upon request.

[1] bbn No. 40 16779

* U_L approval

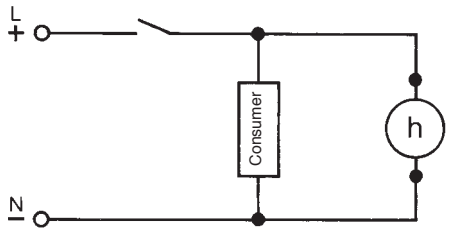
dimensions

measurements in mm



SK 0203 Z 91

wiring diagram



SK 0204 Z 91

elapsed-time meter

SK 0129 Z 96

E 233-12/48 DC

Modular DIN Rail Components MDRC

Time meters
(synchronous or quartz-controlled)

DIN EN 60 730,
DIN VDE 0633-1

They control the opening and closing of circuits, according to a preestablished program. The devices can be set on permanent ON-OFF. Daily and weekly switches are available, the former in the 1 module version. The ATS-1R and ATS-7R versions are provided with an internal battery which is normally charged by the mains voltage, so that the devices can maintain the time set even in case of breaking of the supply voltage (up to 150 h).

Special features

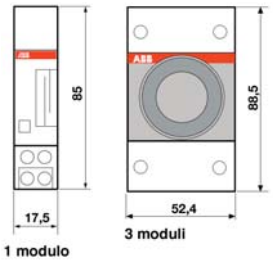
- visible operation check
- position indicator
- preselection of ON or OFF position
- permanent ON/OFF switch
- daylight saving time adjustment through bi-directional precision positioning
- transparent cover sealable
- protection against electric shock according to DIN VDE 0106 Part 100 (BGV A2)

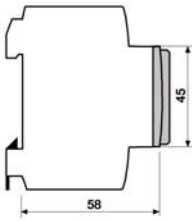
Joint technical data

rated voltage (+10%/-15%):	230 VAC (ATS-1) 230 VAC/130 VDC (ATS-1R, ATS-7R)
number and type of contacts:	1 switching and voltage free
rated contact capacity In (250 VAC):	16 cosf= 1 2.5 cosf= 0.6
rated frequency:	50 Hz (ATS-1) 50/60 Hz (ATS-1R, ATS-7R)
min. spread between two commands:	30 min (daily), 3 hours (weekly)
max. number of commands per cycle:	48 (daily), 56 (weekly)
operating accuracy:	2.5 s/24 h
power consumption:	1 W
standards:	IEC 669-1, CEE 24, EN 60730-1
operating temperature:	-20 to +55 °C
storage temperature:	-30 to +70 °C
tunnel terminal cable cross section:	0.5 to 6 mm^2

dimensions

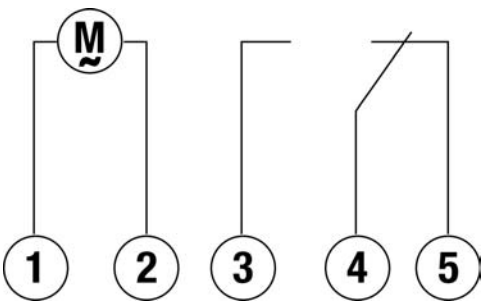
measurements in mm



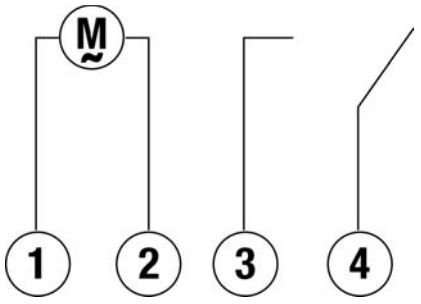


Selection table

	modules	order details type code	order code	bbn 8012542 EAN			weight 1pc. Kg	pack. unit pc.
daily time switch	1	ATS-1M	16014703	629108			0.9	1
daily time switch with standby battery	1	ATS-1RM	16014711	629207			0.9	1
daily time switch	3	ATS-1	16014729	629306			0.285	1
daily time switch with standby battery	3	ATS-1R	16014737	629405			0.285	1
yearly time switch with standby battery	3	ATS-7R	16014760	629504			0.285	1



ATS-I
ATS-IR
ATS-7R



ATS-IM
ATS-IRM

Modular DIN Rail Components MDRC

Timers, programmable time meters with micro-processor-controlled electronics

SK 0165 B 02

DTS 1/1

SK 0167 B 02

DTS 7/1

SK 0164 B 02

DTS 7/2

SK 0166 B 02

DTS 7/2i

Special features DTS

- day or weekly program (DTS 1/1 day program only)
- yearly time switches DTS 7/3Y and DTS 7/4Y
- easy to operate
- automatic change to/from daylight saving time
- transparent cover sealable
- assignment of weekday blocks (DTS7/2i free)
- permanent memory (EEPROM)
- environmentally friendly lithium battery
- pre-selectable switching (manual) does not change program
- comes in display energy-saving mode (shortly press clock button to activate display)

  permanent display when connected

Assignment of blocks

As days can be assigned to blocks as required (DTS7/2i), there is a multitude of possible switching patterns.
e.g. Tuesday to Saturday 9:00 a.m. ON
(block command = 1 memory location)
Tuesday, Wednesday, Thursday 8:00 p.m. OFF
(block command = 1 memory location)
Friday, Saturday 10:00 p.m. OFF
(block command = 1 memory location)

Technical Data

	DTS 1/1	DTS 7/1	DTS 7/2	DTS 7/2i
	day program, 1 channel, EEPROM	day/week program, 1 channel, EEPROM	day/week program, 2 channel, EEPROM	day/week program, 2 channel, EEPROM, pulse cycle
rated voltage:	220 – 240 VAC – 10 %/+ 15 %	220 – 240 VAC – 10 %/+ 15 %	220-240 VAC – 10 %/+ 15 %	220-240 VAC – 10 %/+ 15 %
rated frequency :	50 – 60 Hz (+/– 10 %)	50 – 60 Hz (+/– 10 %)	50 – 60 Hz (+/– 10 %)	50 – 60 Hz (+/– 10 %)
switching capacity at	μ16 A, cos φ = 1	μ 16 A, cos φ = 1	μ 16 A, cos φ = 1	μ16A, cos φ = 1
inductive load 250 V/AC:	μ 2.5 A, cos φ = 0.6	μ 2.5 A, cos φ = 0.6	µ 2.5 A, cos φ = 0.6	μ2.5 A, cos φ = 0.6
load of filament lamps:	1000 W	1000 W	1000 W	1000 W
contact opening:	< 3 mm (μ)	< 3 mm (μ)	< 3 mm (μ)	< 3 mm (μ)
contact material:	AgCdO	AgCdO	AgCdO	AgCdO
intrinsic consumption:	5 VA	5 VA	5 VA	5 VA
running reserve:	ca. 3 years at 20 °C	ca. 3 years at 20 °C	ca. 3 years at 20 °C	ca. 3 years at 20 °C
accuracy:	± 2.5 s/day at 20 °C	± 2.5 s/day at 20 °C	± 2.5 s/day at 20 °C	± 1 s/day at 20 °C
smallest switching interval:	1 minute	1 minute	1 minute	1 minute 1 second (pulse/cycle)
pulse/cycle:				1 – 99 NO/min
contact complement:	1 W	1 W	2 W	2 W
ambient temperature:	–25 °C/–13°F to 55 °C/131°F	–25 °C/–13°F to 55 °C/131°F	–25 °C/–13°F to 55 °C/131°F	–25 °C/–13°F to 55 °C/131°F
memory locations:	12	20	30	40
battery:	environm. friendly lithium	environm. friendly lithium	environm. friendly lithium	environm. friendly lithium
assignment of weekdays to blocks:	–	preset patterns	preset patterns	free
casing material:	PPE + PS	PPE + PS	PPE + PS	PPE + PS
connection capacity:	2x2.5 mm² multi-stranded; 1x4 mm² finely stranded/ sleeve or massive wire	2x2.5 mm² multi-stranded; 1x4 mm² finely stranded/ sleeve or massive wire	2x2.5 mm² multi-stranded; 1x4 mm² finely stranded/ sleeve or massive wire	2x2.5 mm² multi-stranded; 1x4 mm² finely stranded/ sleeve or massive wire
approvals:	VDE	VDE	VDE	VDE
standard:	DIN EN 60730	DIN EN 60730	DIN EN 60730	DIN EN 60730
protection against electric shock:	acc. to DIN VDE 0660 Part 514	acc. to DIN VDE 0660 Part 514	acc. to DIN VDE 0660 Part 514	acc. to DIN VDE 0660 Part 514
protection class: module width:	II acc. to DIN EN 60730-1 2	II acc. to DIN EN 60730-1 2	II acc. to DIN EN 60730-1 2	II acc. to DIN EN 60730-1 2

Modular DIN Rail Components MDRC

Timer, programmable time meters with micro-processor controlled electronics

SK 161 B 02

DTS 7/3 Y

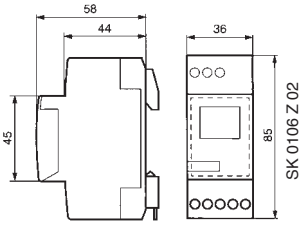
Technical Data

	DTS 7/2i special voltage	DTS 7/3 Y	DTS 7/4 Y
	day/week program, 2 channel, EEPROM, pulse cycle	day/week/year program, 3 channel, EEPROM, pulse cycle, also programmable via software DTS/PRG-SW	day/week/year program, 4 channel, EEPROM, pulse cycle, DCF 77, also programmable via software DTS/PRG-SW
rated voltage:	1. 100 – 120 VAC – 10 %/+ 15 % 2. 24 VAC/DC –10 %/+15 %	220 – 240 VAC – 10 %/+ 15 %	220 – 240 VAC – 10 %/+ 15 %
rated frequency:	50 – 60 Hz (+/– 10 %)	50 – 60 Hz	50 – 60 Hz
switching capacity at	μ 16 A, cos φ = 1	μ 16 A, cos φ = 1	μ 16 A, cos φ = 1
inductive load 250 V/AC:	μ 2.5 A, cos φ = 0.6	μ 2.5 A, cos φ = 0.6	μ 2.5 A, cos φ = 0.6
load of filament lamps:	1000 W	1000 W	1000 W
contact opening:	< 3 mm (μ)	< 3 mm (μ)	< 3 mm (μ)
contact material:	AgCdO	AgCdO	AgCdO
intrinsic consumption:	5 VA	5 VA	5 VA
running reserve:	ca. 3 years at 20 °C	6 years at 20 °C	6 years at 20 °C
accuracy:	± 1 NO/day at 20 °C	± 1 NO/day at 20 °C	± 1 NO/day at 20 °C
smallest switching interval:	1 minute 1 second (pulse/cycle)	1 minute 1 second (pulse/cycle)	1 minute 1 second (pulse/cycle)
pulse/cycle:	1 – 99 NO/min	1 – 99 NO/min	1 – 99 NO/min
contact complement:	2 W	3 W	4 W
ambient temperature:	–25 °C/-13°F to 55 °C/131°F	–25 °C/-13°F to 55 °C/131°F	–25 °C/-13°F to 55 °C/131°F
memory locations:	40	400	400
battery:	environm. friendly lithium	environm. friendly lithium	environm. friendly lithium
assignment of weekdays to blocks:	free	buttons for each day	buttons for each day
casing material:	PPE + PS	PPE + PS	PPE + PS
connection capacity:	2 x 2.5 mm² multi-stranded; 1 x 4 mm² finely-stranded/ sleeve or massive wire	2 x 2.5 mm² multi-stranded; 1 x 4 mm² finely-stranded/ sleeve or massive wire	2 x 2.5 mm² multi-stranded; 1 x 4 mm² finely-stranded/ sleeve or massive wire
approvals:	VDE/U_L (120 VAC)	VDE	VDE
specification:	DIN EN 60730	DIN EN 60730	DIN EN 60730
protection against electric shock:	acc. to DIN VDE 0660 Part 514	acc. to DIN VDE 0660 Part 514	according to DIN VDE 0660 Part 514
protection class: module width:	II acc. to DIN EN 60730-1 6	II acc. to DIN EN 60730-1 6	II according to DIN EN 6073-1 6

contact complement	memory locations	power loss W	order details type code	order code	bbn 80 12542 EAN	price 1 piece	price group	w'ght 1 pc. kg	pack. unit pc.
1 CO	12	5 VA	DTS 1/1	16015544	50660 7			0.120	1
1 CO	20	5 VA	DTS 7/1	16015551	50670 6			0.120	1
2 CO	30	5 VA	DTS 7/2	16015569	50680 5			0.150	1
2 CO	40	5 VA	DTS 7/2i	16015577	50690 4			0.150	1
2 CO	40	5 VA	DTS 7/2i 120AC*	16016740	53840 0			0.150	1
2 CO	40	5 VA	DTS 7/2i 24AC/DC	16016732	53830 1			0.150	1
3 CO	400	5 VA	DTS 7/3 Y	16015585	50700 0			0.380	1
4 CO	400	5 VA	DTS 7/4 Y	16016757	53850 9			0.410	1

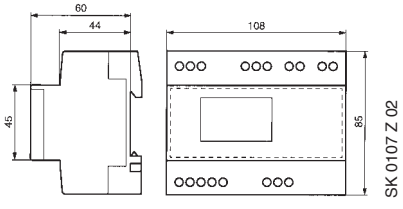
*U_L approval

dimensions



SK 0106 Z 02

DTS 1/1, 7/1, 7/2, 7/2 i



SK 0107 Z 02

DTS 7/3 Y, 7/4 Y

DTS/DCF

Technical Data Aerial DTS/DCF

connection:	to time switch (10 mA DC), max. 10 DTS 7/4 Y
power consumption:	3 mW
receiving sensitivity:	< 75 µV/m at + 25 °C
ambient temperature:	– 20 °C/– 4 °F to + 60 °C/140 °F
degree of protection:	IP 54
cable length from device:	2 m
cable length installation:	300 m max. (2 x 1.5 mm²)
weight:	230g
dimensions (mm):	ø x l = 28 x 191

DTS/PRG-SW*

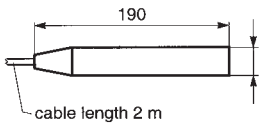
comes with

- PC programming software for Windows 3.11 or better, assistant for programming switching sequences, switching sequences analysis per channel, symbol library for channel allocation, automatic holiday assignment, calculation of floating holidays, print-outs of switching sequences and corresponding graphics.
- PC software “Astro” for easiest writing of astronomical programs. Calculation of ON and OFF times depending on sunrise/sunset times, easy time zone selection via geographical maps.
- hand-held programmer transmitting date/time and 4 programs max. . Stores programs in EEPROM; bidirectional serial interface to transmit/receive programs. Exchangeable battery included. Transmission of programs from time switch to time switch
- connection cable hand-held to PC
- manual

description	order details type code	order code	bbn 80 12542 EAN	price 1 piece	price group	w'ght 1 pc. kg	pack. unit pc.
Accessories							
aerial for DTS 7/4Y	DTS/DCF	16016765	53860 8			0.230	1
sender/software for DTS 7/3Y u. DTS 7/4Y	DTS/PRG-SW*	16016773	53870 7			0.115	1

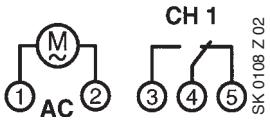
* released soon

Dimensions

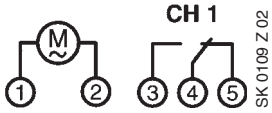


DTS/DCF

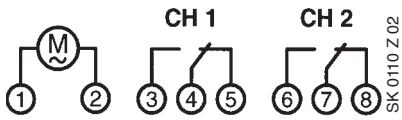
Wiring diagrams



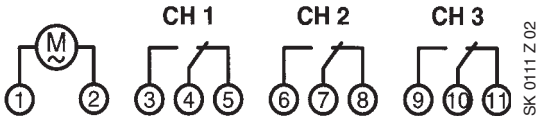
DTS 1/1



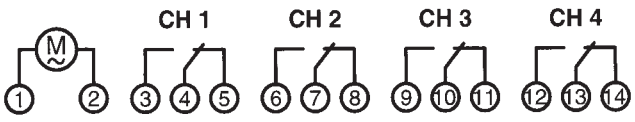
DTS 7/1

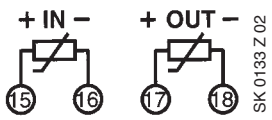


DTS 7/2 and 7/2i



DTS 7/3 Y





DTS 7/4 Y

Modular DIN Rail Components MDRC

MINI Meter

General Description / Technical Data / Ordering Details

General description

ABB Cewe 's MINI Meter is a single- phase active energy meter for applications that do not demand a certified meter. It is a robust meter with LED display that can be read even in dark places.
The MINI Meter can be used as a direct- or transformer connected meter. When used as transformer connected, the meter allows programming of a number (see technical data for selection) of transformer ratios.
The LED display consists of 4- digits, by simply pushing a button two additional digits can be read (4+ 2) . The MINI Meter has as standard the energy consumption shown in kWh without decimal.
The Mini Meter is available with or without pulse output and the assortment includes also a version with reset.
The two push buttons, "Set "and "Scroll ", allows programming of the transformer ratio and the pulse output frequency. One are also used to display the two additional integer digits.The MINI Meter is mainly conceived for DIN- rail mounting, preferably into standard enclosures with DIN- compartments. The width of the meter is equal to only 3 modules. The MINI Meter is adapted to the ABB pro M design.
The MINI Meter has high reliability and it complies to standards IEC61010- 1 and EN61326, with regard to safety requirements and EMC, accuracy class is 2.

Technical Data

Installation category:	III
Accuracy:	+ / - 2 %
Start current:	35 mA
Basic current:	5 A
Current range:	0.1 to 32 A
Max. fuse:	32 A
Voltage :	1x230 V + / - 10%
Frequency:	50 / 60 Hz
Internal comsumption:	1.5 W
Temperature range:	- 40 to + 70° C
Relative humidity max.	According IEC 1036
Transformer ratio	
Programmable values:	1, 3, 10, 20, 30,40,50, 60. (The default set up at delivery is 1.)
Pulse output (optional)	
Programmable:	1, 10, 100, 1000 imp/ kWh. (The default set up at delivery is 10.)
Max. current:	100 mA
Pulse length:	100 ms
Pulse output voltage:	10- 40 V, AC or DC
Max. connection area:	1.5 mm^2
Min. connection area:	0.2 mm^2
Connection terminals	
Max. connection area:	10 mm^2
Min. connection area:	1.5 mm^2
Reset input terminal (optional)	
Max. voltage:	40 V AC or DC
Function:	– 10 40 V performs a reset
Max. connection area:	1,5 mm^2
Min. connection area:	0,2 mm^2
Display	4 digit LED (two additional integer positions can be read by means of scroll button.)
Enclosure	
Material:	Polycarbonate
Degree of protection:	20 IP
Weight	157 g
Standards	Safety requirements
IEC 61010	E M C
EN 61326	
Documentation:	User manual and Installation Instructions are packed together with the meter

Single phase – 230 V, single tariff

Description	Selectable pulse output frequencies	Type Code	Ordering Details Type No.
Without pulse output			
		EE20	**09 810 80**
Locally resetable		**EE20 R**	**09 810 81**
With pulse output			
	1, 10, 100,1000 imp. / kWh*	**EE22**	**09 810 82**
Locally resetable	1, , 10 100,1000 imp. / kWh*	**EE22 R**	**09 810 83**
Locally and remote resetable	1, 10, 100,1000 imp. / kWh*	**EE22 Rr**	**09 810 84**

* Pulse output frequency 10 imp/ kWh is the default set up at delivery.

Each meter can be used both as direct connected or transformer rated meter. Transformer ratio values 3,10,20,30,40,50,60 can be programmed in the meter to obtain primary reading. The default set up value at delivery is 1.
When used as transformer rated, the pulse output is primary related.

Modular DIN Rail Components MDRC
Delta Meter
General Description / Technical Data

General description

Delta Meter is an electronic meter mainly conceived to be DIN-rail mounted. Delta Meter is designed according to ABB's ProM standard.
All Delta Meters are type approved according to the international standard IEC 1036 (for active energy) and IEC 1268 (for reactive energy). These standards cover all technical aspects regarding climatic conditions, electrical and mechanical requirements, electromagnetic compatibility (EMC) and accuracy.
The Delta Meter is easy to read. It has an LCD (Liquid Crystal Display) with 7 mm high digits and several symbols. The meter has also a polarity independent, solid state (semiconductor) relay that generates pulses proportionally to the measured energy. A red LED (Light Emitting Diode) flashes proportionally to the measured energy. Selection of the information in the LCD-display and programming of the Delta Meter is achieved via two buttons.
All Delta Meters are able to perform an installation check: a control test that indicates if mistakes were made in the installation.
The Delta Meter offers a primary measurement function when connected to external voltage (VT) or current (CT) transformers. The product VT x CT = transformer ratio, can be easily set up in the meter by means of the two programming buttons. Due to this function the display shows the real energy consumption values.

The product assortment is divided into 2 main groups:
- Direct connected meters up to 65 A
- Transformer rated meters (CT/VT) for currents > 65 A

For each main group there are subgroups:
- Different voltages
- Active energy metering
- Reactive energy metering
- Combined metering (both active and reactive)
- Tariff controlled meters (1 - 4 tariffs, active and combined)

Technical Data

Electric data and accuracy classes	Direct connected and transformer rated meters (VT/ CT)
Voltage	3x230/ 400 is standard, other values on request, see product assortment. Voltage range -20% to +15% of nominal voltage.
Power consumption of voltage circuits:	4 < VA, 2 W/ phase; normally 2.5 VA, 1.5W
Transformer rated meters:	1(6) A Class 1 2(6) A for Class 2
Starting current:	2 < mA for Class 1, < 4 mA for Class 2
Direct connected meters:	5(65) A for Class 1 and Class 2
Starting current:	< 25 mA
Power consumption of current circuits:	< 0.2 VA per phase
Frequency	50/ 60 Hz2.5%
Accuracy	IEC 1036 Class 1 and 2 for active meters, IEC 1268 Class 2 for reactive meters.
Temperature range:	-40° C to +55 C
Display	LCD with 7 digits, height 7 mm
Mechanical data	
Material:	Polycarbonate in the frontal glass and casing; the terminal base is of glass fibre reinforced polycarbonarte
Protection class	I
Resistance to heat and fire:	Equivalent to IEC 695- 2- 1
Protection against penetration of dust and water	Equivalent to IEC 529 class IP51 with long cover and IP20 without long cover
Max. connection area at terminal:	10 mm 2 for VT/ CT, 25 mm 2 for direct connected meters
Total weight:	0,5 kg
Pulse output	
Max. current, max. voltage:	100 mA, 247 V AC, DC
Max. connection area:	2.5 mm^2
Pulse output frequency:	1000 imp/ kWh for VT/ CT and 100 imp/ kWh for direct, other values on demand.
Pulse length:	100 ms ± 1ms is standard.
Flashing frequency for the LED	5000 imp/ kWh for VT/ CT and 1000 imp/ kWh for direct, other values on request.
Tariff input	
Tariffs are binary coded. Other codes on request.	
Max. voltage:	276 V AC
Voltage range:	0- 20V AC (switches the tariff input to "0") 57- 276 V AC (switches the tariff input to "1")
Max. connection area at terminal:	2.5 mm^2
Standards	
IEC 1036	For active meters Class 1 and 2
IEC 1268	For reactive meters Class 2
DIN 43864 (SO) IEC 62053- 31	Pulse output

Modular DIN Rail Components MDRC

Delta Meter - Transformer rated 3-phase meters

Ordering Details

Active meter - accuracy class 2

Voltage (V)	Pulse output frequency imp/kWh (kvarh)	Type Code	Ordering Details Type No.	Number of tariffs
3x230	programmable	998 374 43	DAB 22 00 00	
3x230	1000	998 374 34	DAB 22 15 00	
3x230/400	100	998 374 09	DAB 21 13 00	
3x63/110	1000	998 374 11	DAB 24 15 00	
3x63/110	10000	998 374 12	DAB 24 23 00	
3x63/110	50000	998 374 14	DAB 24 25 00	
3x230/400	1000	998 374 15	DAB 21 15 00	
3x230/400	50000	998 374 40	DAB 21 25 00	
3x57/100	1000	998 374 39	DAB 23 15 00	
3x100	1000	998 374 38	DAB 25 15 00	
3x110	1000	998 374 16	DAB 26 15 00	
3x127/220	1000	998 374 17	DAB 27 15 00	
3x400	1000	998 374 18	DAB 29 15 00	
3x500	1000	998 374 19	DAB 20 15 00	
3x230/400	programmable	998 374 32	DAB 21 00 00	
3x230/400	1000	998 374 05	DGB 21 15 02	3
3x230/400	1000	998 374 27	DGB 21 15 01	2

Active meters - accuracy class 1

Voltage (V)	Pulse output frequency imp/kWh (kvarh)	Type Code	Ordering Details Type No.	Number of tariffs
3x230/400	1000	998 374 21	DAB 11 15 00	
3x400	1000	998 374 22	DAB 19 15 00	
3x500	1000	998 374 23	DAB 10 15 00	

Combined meters - accuracy class 2

Both active and reactive measuring, with pulse output.

Voltage (V)	Pulse output frequency imp/kWh (kvarh)	Type Code	Ordering Details Type No.	Number of tariffs
3x230	1000	998 374 37	DCB 22 15 00	
3x230/400	1000	998 374 24	DCB 21 15 00	
3x230/400	1000	998 374 35	DIB 21 15 02	3

Reactive meters - accuracy class 2

Voltage (V)	Pulse output frequency imp/kWh (kvarh)	Type Code	Ordering Details Type No.	Number of tariffs
3x230	1000	998 374 36	DEB 22 15 00	
3x230/400	1000	998 374 25	DEB 21 15 00	

1-phase meter

Active meters, VT/CT - accuracy class 2

Voltage (V)	Pulse output frequency imp/kWh (kvarh)	Type Code	Ordering Details Type No.	Number of tariffs
1x230	1000	998 374 98	DAB 2A 15 00	

Active meters, direct connected - accuracy class 2

Voltage (V)	Pulse output frequency imp/kWh (kvarh)	Type Code	Ordering Details Type No.	Number of tariffs
1x230	100	998 375 70	DBB 2A 17 00	

Modular DIN Rail Components MDRC

Delta Meter - Direct connected 3-phase meters

Ordering Details

Active meters - accuracy class 2

Voltage (V)	Pulse output frequency imp/kWh (kvarh)	Type Code	Ordering Details Type No.	Number of tariffs
3x230	programmable	998 374 71	DBB 22 02 00	
3x230/400	programmable	998 374 69	DBB 21 02 00	
3x230/400	100	998 375 00	DBB 21 17 00	
3x230	100	998 374 73	DBB 22 17 00	
3x230/400	1000	998 374 94	DBB 21 18 00	

Combined meters - accuracy class 2

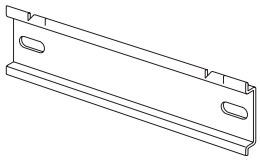
Both active and reactive measuring, with pulse output.

Voltage (V)	Pulse output frequency imp/kWh (kvarh)	Type Code	Ordering Details Type No.	Number of tariffs
3x230/400	100	998 374 72	DDB 21 17 00	

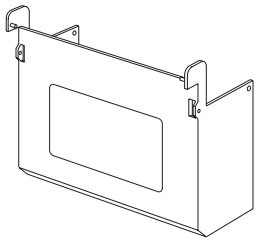
Accessories

Type	Use	Type Code	Ordering Details Type No.	
DIN-rail	For wall mounting	09 811 02		
Long cover	For wall mounting	09 811 81		
External counter	For panel mounting	09 811 04		
Front mounting kit	For panel mounting	09 811 84		
Time switch clock for tariff control STT 227		19 102 30		

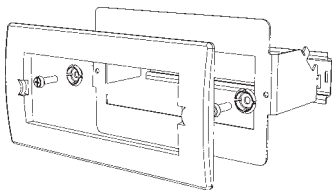
DIN-rail



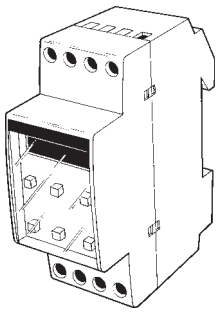
Long cover



Time switch clock for tariff control STT 227



External counter



Modular DIN Rail Components MDRC
ODIN Meter
General Description / Technical Data

General Description

ODIN Meter is a compact electricity energy meter made for measuring active electrical energy and designed to be mounted on a DIN rail in distribution boards or in standard cabinets.

During the development process creating SIMPLICITY was the number one priority. The ODIN Meter shall be perceived as easy to install, use and distribute.

Examples of this can already be seen on the front of the electricity energy meter, clear marking, strong screws in the connecting terminal and an easy to read display.

Enclosed in the carton are easy to understand instructions, which use text and diagrams to describe in detail how the installation should be carried out.

The ODIN Meter is certified according to the international standard IEC 61036. The standard covers several technical requirements including climate, mechanics, electronics, EMC and accuracy. Further more the ODIN
Meter has a national approval from Sweden's Test and Research Institute (SP) as a revenue meter. This guarantees the ODIN Meter is highly reliable, has a long life expectancy and maintains its measuring accuracy.

Technical Data

	OD 4165	OD 4110
Voltage	3x230/ 400 V AC	3x230/ 400 V AC
Voltage range	-20% to +15%	-20% to +15%
Max. current	65 A	10 A
Starting current	25 mA	15 mA
Power consumption of current circuits	< 3 VA/ phase	< 0.02 VA/ phase
Power consumption of voltage circuits	-	< 2 VA/ phase
Frequency	50/ 60 Hz	50/ 60 Hz
Accuracy of measurement	Class 2 (± 2%)	Class 2 (± 2 %)
Standard	IEC 61036	IEC 61036
Temperature range	-25 to +55º C	-25 to +55º C
Programmable transformer ratios	-	5/ 5, 75/ 5, 100/ 5 150/ 5, 200/ 5, 250/ 5, 300/ 5, 400/ 5, 500/ 5, 600/ 5, 700/ 5 750/ 5, 800/ 5, 900/ 5 A/ A
Material of front cover	Polycarbonate	Polycarbonate
Material of back cover	Polycarbonate/ glass fibre	Polycarbonate/ glass fibre
Resistance to heat and fire	Equivalent to IEC 695- 2- 1	Equivalent to IEC 695- 2- 1
Protection against penetration of dust and water	IP 20	IP 20
Connection area in the current connection terminal	1 – 16 mm^2	1 – 16 mm^2
Connection area in the voltage connection terminal	-	0.5 – 6 mm^2
Pulse output		
Connection area in the connecting terminal	0.5 – 2.5 mm^2	0.5 – 2.5 m^2
External pulse voltage	5 – 40 V DC	5 – 40 V DC
Max. current	100 mA	100 mA
Pulse length	100 ms ±2.5 ms	100 ms ±2.5 ms
Pulse frequency	100 imp/ kWh	1 imp/ kWh
Standard	IEC 62053- 1 (S0)	IEC 62053- 1 (S0)
LED		
Pulse frequency	100 imp/ kWh	100 imp/ kWh
Pulse length	40 ms	40 ms
Display	LCD with 7 digits without a decimal place, 6 mm	LCD with 7 digits without a decimal place, 6 mm

OD4165 direct connection, 3 phase meter up to and including 65 A

Voltage (V)	Pulse output frequency	Type Code	Ordering Details Type No.
230/400V	100 imp./kWh	OD4165	2CMA131024R1000

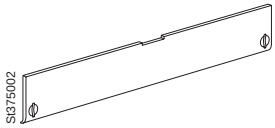
OD4110 connection via external current transformers, 3 phase meter

Voltage (V)	Pulse output frequency	Type Code	Ordering Details Type No.
230/400V	1 imp./kWh	OD4110	2CMA131025R1000

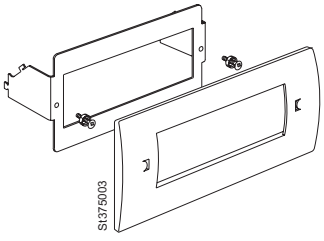
Accessories

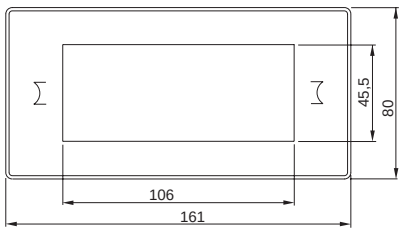
Type	Use	Type Code	Ordering Details Type No.
Protective sealable flap	When sealing	09 809 25	
Front mounting kit	For panel mounting	09 811 84	
Enclosure (6 modules)	For wall mounting	09 809 50	

Protective sealable flap

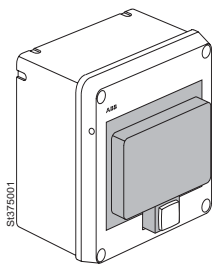


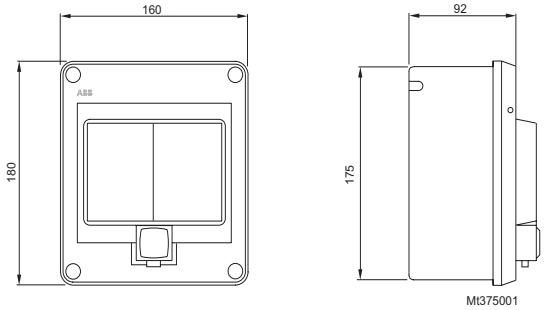
Front mounting kit





Enclosure





Modular DIN Rail Components MDRC

Twilight switch SDS 101

SK 0074 B 98

SDS 101 N

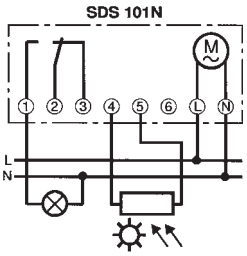
SK 073 B 00

SK 0038 B 95

SDS-L1 surface-mounted flush-type photo sensor with mounting bracket

SDS-L2 photo sensor

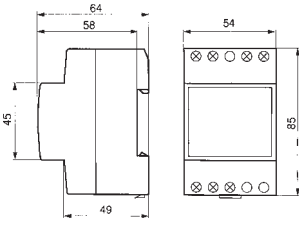
wiring diagram



SK 0180 Z 98

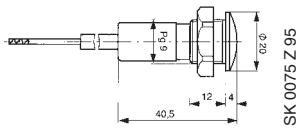
dimensions

measurements in mm



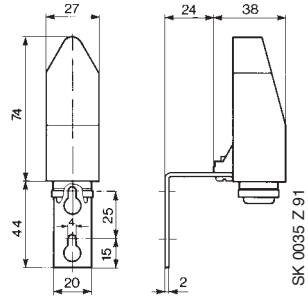
SDS 101

SK 0181 Z 98



SK 0075 Z 95

flush-type photo sensor



SK 0035 Z 91

photo sensor with mounting bracket

Devices for panel installation onto mounting rails (35 mm) according to DIN EN 60 715

mounting depth: 68 mm
mounting width: 54 mm = 3 modules
color: gray, RAL 7035

Application

Twilight switch SDS 101 is used to automatically switch ON/OFF lighting systems depending on the daylight.

A photo sensor measures the brightness of the light and transmits the value thus obtained to the switch.

The closing operation of the twilight switch can be interrupted by a time switch at some preset time of the day and/or at preset days of the week.

The application of SDS 101 focuses on the control of the lighting of streets, shop windows and staircases.

Technical data

rated voltage:	230 VAC ± 10 %
frequency:	45 to 60 Hz
rated voltage photo sensor:	10 V, 1 mA
contact:	potential-free: maximum opening less than 3 mm (μ)
contact material:	Ag CdO
switching capacity:	10 A/250 VAC; cos φ = 1; 6 A/250 VAC; cos φ = 0.6
load of filament lamp:	1000 W
halogen lamp (230 VAC):	1000 W
fluorescent lamp non-/series compensated: shunt compensated: twin-lamp circuit:	 800 W 200 W 800 W
high-pressure vapor lamp:	use contactor
indication of switching position:	instantaneously by LED
ON/OFF delay:	ca. 80 s, to avoid malfunctioning caused by lightning, car headlights, etc.
setting:	range 1: ca. 3 – 40 Lux stepless adjustment range 2: ca. 40 – 2500 Lux stepless adjustment
degree of protection:	switching device: IP 20 surface-mounted photo sensor: IP 54 with cable connected from below flush-mounted photo sensor: IP 65
perm. ambient temperature:	switching device: – 10 °C/14 °F ... + 50 °C/122 °F photo sensor: – 40 °C/104 °F ... + 70 °C/158 °F
cable for photo sensor:	2 wire, 100 m max.
protection against electric shock:	according to DIN VDE 0660 Part 514
radio interference suppression:	according to VDE 0875/6.77
suppression level:	"N" according to EC Directive 76/889/EEC

Selection table

description	power loss W	order details type code	order details order code	bbn 40 16779 EAN	price 1 pc.	price group	w'ght 1 pc. kg	pack. unit piece
twilight switch								
incl. photo sensor and mounting bracket	4	SDS 101 N	GH V021 0879 R0003	42910 8			0.270	1 set
incl. built-in photo sensor	4	SDS 101-L2 N	GH V021 0879 R0004	42920 7			0.270	1 set
surface-mounted photo sensor incl. mounting bracket for SDS 101	–	SDS-L 1	GH V021 0895 R0004	53020 5 [1]			0.050	1
built-in photo sensor with 1.5 m connection cable for SDS 101	–	SDS-L 2	GH V021 0895 R0005	16210 4			0.150	1

[1] bbn-No.: 40 12233

Modular DIN Rail Components MDRC
Light level switches STL

DIN EN 50 082-1,
DIN EN 55 014,
DIN EN 55 015

SK 0085 B 97

STL-101

SK 0086 B 97

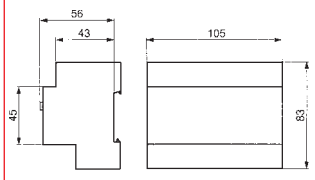
STL-103

SK 073 B 00

photo sensor with
mounting bracket

Dimensions

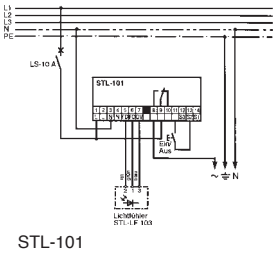
measurements in mm



STL-101
STL-103

SK 0134 Z 97

connection example



SK 0244 Z 99

STL-101

Devices for panel installation onto mounting rails (35 mm) according to DIN EN 60 715

mounting depth: 68 mm
mounting width: 105 mm = 6 modules
color: gray, RAL 7035

Application

Light level switch STL 101 switches the connected lighting circuit (STL-103 up to 3) on or off, depending on the brightness measured. Extra-low voltage signals of a photo sensor installed outside of a building or in the immediate vicinity to a window are processed according to the preset reference values.

Setting of switching values and operating ranges

STL-101

With the “disconnection value” potentiometer the light value is steplessly adjusted between 10 and 20000 Lux, where the light is to be switched off.
The “reconnection value” potentiometer is used to determine the percentage of the disconnection value that, when reached, will cause the lights to go on again. This value can vary between 50 and 95 %. If, e.g. the disconnection value is 500Lux and the reconnection value is 80 %, the light goes on again when less than 400 Lux are available.

STL-103

Individual and steplessly adjustable switching values can be allocated to the three lighting circuits. The potentiometer swichting value 1, 2 and 3 can be used to set the light values for the disconnection of the lighting circuits. The hysteresis for the reconnection of the circuits is 10 %, i.e. if the external light value falls 10 % below the preset reference value, the circuits are reconnected again.
Use the slide switch (values expressed in Lux) to select operating ranges from 10-1000 Lux and 200 to 20000 Lux.

Reclosing lockout

Use the slide switch (reclosing lockout ON or OFF) to activate a lockout that prevents that the light level switches switches the circuits on automatically. Then, the device will switch off the lighting system when the disconnection value is reached, the system is reconnected manually with a pushbutton.

A potential-free contact can be used to switch filament or fluorescent lamps directly or to obtain a power gain via relays or contactors. The application of light level switches focuses on the control of office, factories and similar lighting systems.

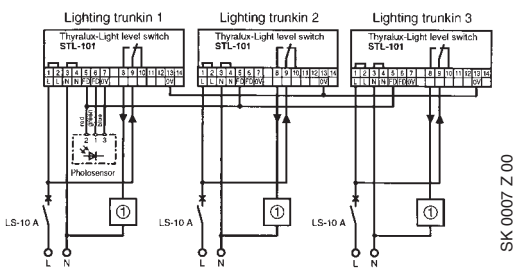
Technical Data

rated voltage:	230 VAC 50 Hz, DC not permissible (will destroy equipment)
power consumption:	ca. 2 W (ca. 3 W in the case of STL 103)
fusing:	external 6 A/for each load circuit
ambient temperature:	0 °C/32 °F to 45 °C/113 °F, supply air if installed horizontally
photo sensor input:	one photo sensor
pushbutton input:	1 pushbutton (NO contact), STL-101: 11/13; STL-103 4/6
control voltage range:	0 – 5 VDC photo sensor, pushbutton, basic insulation according to IEC 664 (10/92) no safety extra-low voltage
contact load:	max. 10 A/250 V~ or 10 A/30 V– (μ)
switching values:	adjustable between ca. 10 – 1000 Lux or 200 to 20000 Lux
delay time:	adjustable in the range of 5 seconds to 20 minutes
class & degree of protection:	II (total insulation), IP 20
terminals:	0.5 mm² – 2.5 mm² for one-wire conductor or with connector sleeve
max. cable length:	100 m, control leads 0.5 mm², load and supply lines 1.5 mm²
pollution degree:	2 (dry, non-conductive, according to IEC 664, 10/92)
terminal assignment:	see connection examples, incorrect installation may lead to malfunctioning or destruction
CE requirements:	EMC fulifiled acc. to EN 61547 (04/96), low voltage acc. to IEC 669-2-1 (11/94)

Selection table

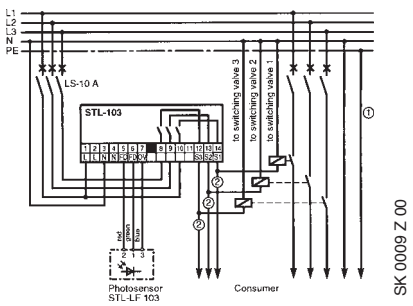
description/ application	power loss W	order details type code	order details order code	bbn 40 12233 EAN	price 1 pc.	price group	w'ght 1 pc. kg	pack. unit piece
light level switch for one lighting group	6	STL-101	GJ V501 0000 R0011	60440 1			0.400	1
light level switch for three lighting groups	8	STL-103	GJ V501 0000 R0012	12700 4 [1]			0.450	1
photo sensor (IP 54) and mounting bracket		STL-LF 103	GH V021 1370 R0171	53210 0			0.100	1

[1] bbn-No. 40 16779



SK 0007 Z 00

[1] lamp contactor to be dimensioned to flexible cord loads up to 2 kVA switchable without contactor



SK 0009 Z 00

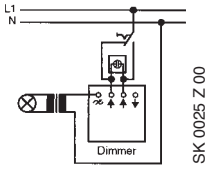
[1] dimensioning according to connected load
[2] loads up to 2 kVA switchable without contactor

Modular DIN Rail Components MDRC

Dimmer STD 50 to control incandescent lamps, Low-volt halogen lamps

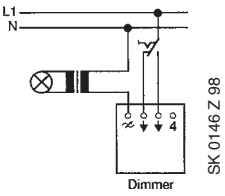
SK 070 B 00

STD 50
STD-EP



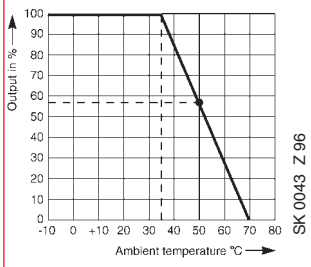
SK 0025 Z 00

Dimmer STD-50-3 in two-way circuit, lv halogen lamps via transformer (DIN VDE 0551)



SK 0146 Z 98

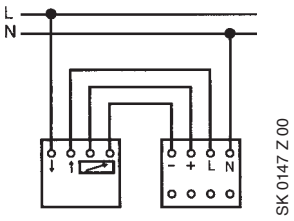
Dimmer STD-50-4 in two-way circuit, lv halogen lamps via electronic transformer



SK 0043 Z 96

Connected load - ambient temperature - diagram

Electronic potentiometer

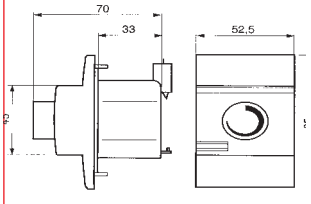


SK 0147 Z 00

STD-EP EVG

dimensions

measurements in mm



STD-50
STD-EP

SK 0129 Z 97

Devices for panel installation onto mounting rails (35 mm) according to DIN EN 60 715

mounting depth:	68 mm
mounting width:	52.5 mm = 3 modules
color:	gray, RAL 7035

Dimmer for brightness control STD 50-3

Application:
Brightness control of incandescent lamps and 230 V tungsten halogen lamps and low-volt halogen lamps with conventional transformers.

Technical data:

rated voltage:	230 VAC ± 10 %/50 Hz
rated current:	max. 2.3 A
max. switching capacity:	500 W/VA
min. switching capacity:	20 W/VA (depending on ambient temperature, see connected load diagram)
power loss:	5 W
degree of protection/ protection against electric shock:	IP 20/according to DIN VDE 0106 Part 100 (BGV A2)
radio interference suppression:	interference level N according to VDE 0875/11.84
ambient temperature:	0 °C/32 °F ... 35 °C/95 °F

Conventional transformers:
When operating conventional transformers each transformer must be primarily protected against short circuit according to the manufacturer's instructions. Safety isolating transformers according to DIN VDE 0551 must be used.
It is not allowed to switch loads via a serial switching contact, because overcurrent and overvoltage occurring during the reconnection process may destroy the dimmer. Secondary no-load operation of conventional transformers is neither allowed when putting the device into operation nor during actual operation.
Always operate conventional transformers at their rated load. To obtain an even brightness level of the halogen lamps throughout the full operating range from bright to dark, transformers should be used that have the same secondary voltage and rating.

Dimmer for brightness control STD 50-4

Application:
Brightness control of incandescent lamps and 230 V tungsten halogen lamps and low-volt halogen lamps with electronic transformers.

Technical data:

rated voltage:	230 VAC ± 10 %/50 Hz
rated current:	max. 2.3 A
max. switching capacity:	420 W/VA
min. switching capacity:	40 W/VA (depending on ambient temperature, see connection load diagram)
power loss:	5 W
degree of protection/ protection against electric shock:	IP 20/according to DIN VDE 0106 Part 100 (BGV A2)
radio interference suppression:	interference level N according to VDE 0875/11.84
ambient temperature:	0 °C/32 °F ... 35 °C/95 °F

Note:
To obtain an even brightness level of the halogen lamps throughout the full operating range from bright to dark, use electronic transformers that have the same secondary voltage and rating.
Conventional transformers must not be connected to this dimmer (loss of guarantee).
The electronics protect the dimmer from load-related short circuits. Where a fault occurs due to temperature-related overload, the dimmer self-adjusts the brightness value set to a non-critical brightness level; in this case, connected loads may flicker. To restore normal functioning, check the load of the dimmer, and reduce it if appropriate. Allow the dimmer sufficient time to cool down before putting it back into operation.

Influence of ambient temperature on the control power

The certified rated power is indicated on the dimmer.
Where higher ambient temperatures occur, reduce values as is specified in the connected load diagram.
At 50 °C/122°F ambient temperature, the permissible load drops to 57 %.

Selection table

description/ application	power loss W	order details type code	order code.	bbn 40 16779 EAN	price 1 pc.	price group	w'ght 1 pc. kg	pack. unit piece
Dimmer for brightness control								
incandescent lamps, 230 VAC, tungsten halogen lamps, low-volt halogen lamps with conventional transformers (phase control)	5 [1]	STD 50-3	GH V021 1370 R0074	02790 8			0.155	1
incandescent lamps, 230 VAC, tungsten halogen lamps, low-volt halogen lamp with electronic transformers (reverse phase)	5 [1]	STD 50-4	GH V021 1370 R0075	03300 8			0.105	1
Electronic potentiometer for electronic control gear with control input 0/1 – 10 VDC, control current 50 mA DC rated current (terminal 3 and 4) 4 A cos φ = 0.9; switching capacity 700 VA	5 [1]	STD-EP	GH V021 1370 R0076	27050 2			0.155	1

[1] power loss = 1 % of connected load (5 W max.)

Modular DIN Rail Components MDRC

Memory touch controller for electronic control gear

DIN EN 60669-1,
DIN EN 50081-1,
DIN EN 50082-2

SK 0087 B 96

STD-MTS

Devices for panel installation onto mounting rails (35 mm) according to DIN EN 60 715

mounting depth: 68 mm
mounting width: 35 mm = 2 modules
color: gray, RAL 7035

Memory touch controller STD-MTS

Application:
Brightness control of fluorescent lamps through electronic control gear units with 1-10 VDC control input.

Technical data:

rated voltage:	230 VAC ± 10 %/50 Hz
rated current:	4 A cos φ 0.9 (ca. 10 electronic control gear units, follow manufacturers' instructions) 3 A cos φ 0.5
max. switching capacity:	700 VA
power loss:	≤ 1 W
control voltage:	< 1 ... 10 VDC
control current:	max. 50 mA DC
degree of protection:	IP 20
protection against electric shock:	according to DIN VDE 0106 Part 100 (BGV A2)
ambient temperature:	0 °C/32 °F ... 35 °C/95 °F

Operation via extensions (parallel operation)
max. cable length: 100 m
The phase of the power supply input "L" must be identical with the control phase for extension input "1" (see below).

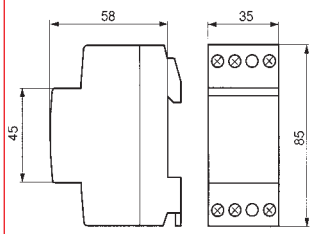
Setting of background brightness
Press control element (e.g. pushbutton) for ca. 30 sec. to switch into the programming mode, which STD-MTS acknowledges by automatically adjusting to the minimum brightness value.
Select desired brightness level and release the button. After ca. 30 sec., STD-MTS returns automatically to the maximum value, thus signaling that the setting has been completed successfully.

Note
The previous brightness value is maintained when the device is switched off (memory function). If a voltage failure occurs, STD-MTS loses this value and will be at maximum brightness when switched on again. When STD-MTS is used for the first time, it goes from bright to dark, and every stop will result in a change of the dimming direction. The dimmer stops at maximum brightness, and changes its dimming direction after having arrived at the minimum value.

Parallel operation
Activate operating element and all STD-MTSs will be switched on and dimmed simultaneously via the extension. Lighting systems may also be operated with a uniform brightness level. To do so, press the operating element for ca. 10 sec. . The lighting system will be switched to maximum brightness and can then be operated synchronously (see below

Dimensions

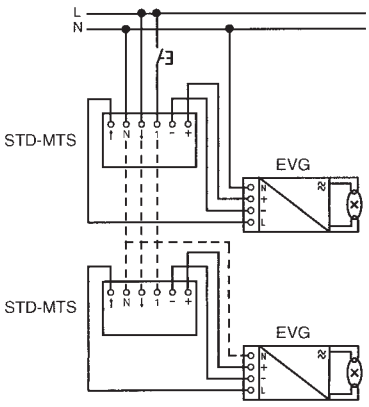
measurements in mm



STD-MTS SK 0150 Z 96

Selection table

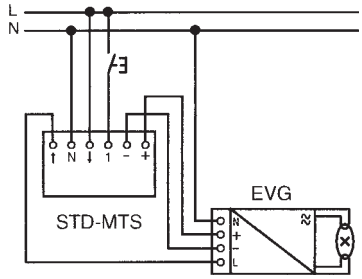
description	power loss W	order details type code	order code	bbn 40 16779 EAN	price 1 pc.	price group	w'ght 1 pc. kg	pack. unit piece
for electronic control gear with control input 1-10 VDC control current max.50mA	≤ 1 W	STD-MTS	GH V021 0881 R0004	27070 0		12	0.110	1



SK 0189 Z 99

Brightness control of fluorescent lamps with 1 – 10 VDC control input.
Control of more than one memory touch controllers STD-MTS via one pushbutton.

Brightness control of a fluorescent lamp with 1 – 10 VDC control input with memory touch controller STD-MTS with external pushbutton, e.g. E 225



SK 0190 Z 99

Modular DIN Rail Components MDRC

Universal dimmer for phase control and reverse phase control

SK 0099 B 00

STD-400C

Devices for panel installation onto mounting rails (35 mm) according to DIN EN 60 715

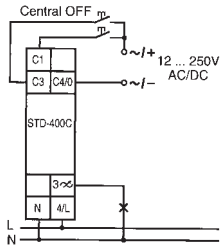
mounting depth: 68 mm
mounting width: 17.5 mm = 1 module
color: gray, RAL 7035

Application

STD-400C universal dimmer is used to control the brightness of:

- incandescent lamps
- 230 V tungsten halogen lamps
- low-volt tungsten halogen lamps with conventional transformers (phase control)
  e.g. ABB safety isolating transformers Si-TR 300-230/12Lv
- Electronic transformers for low-volt tungsten halogen lamps (reverse phase control)
  e.g. ABB electronic safety isolating transformers ETR Speedy or ETR-S

Universal dimmer STD-400C can be operated from one or more pushbuttons (unlit).
It is possible to generate a CENTRAL OFF command via terminal C3. Not suitable for dimming fluorescent lamps.



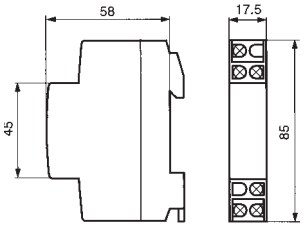
SK 0099 Z 00

Technical Data

control unit	
rated voltage:	6 to 250 VAC/DC (with DC 'minus' to C4/0)
ON duration:	100 %
switch-disconnector	
rated voltage:	230 VAC ±10 %; 50 Hz
Rated power	
– filament lamps & 230V halogen lamps	400 W
– wound transformers	400 W
– electronic transformers	350 W
minimum load:	20 W
ambient temperature:	– 5° C/23 °F to 35 °C/95 °F, higher temperatures reduce capacity
terminal:	0.75 .. 6mm2 rigid or flexible conductors
radio interference suppression:	interference level N (according to DIN VDE 0875)
protection class :	II

Electronic protection against short circuit, overload and excessive temperature; automatic load recognition, soft start, memory function, CENTRAL OFF funct

measurements in mm



STD-400C SK 0150 Z 00

Selection table

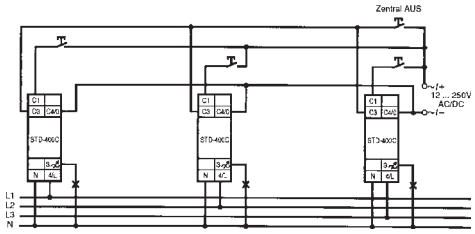
Universal dimmer (remote pushbutton dimmer)

description/ application	power loss	order details		bbn 40 16779 EAN	price 1 piece	price group	w'ght 1 pc. kg	pack. unit pc.
	W	type code	order code					
universal dimmer	0.35	STD-400C*	GH V021 0881R0007	508421			0.075	1

* discontinued

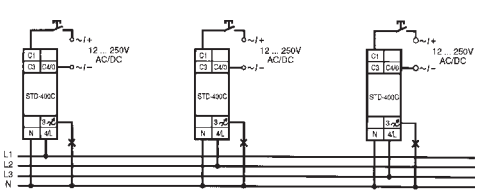
Connection examples

connection diagram with central OFF:
individual pushbutton and central OFF pushbutton must be connected to one SELV.



SK 0061 Z 01

connection diagram without central OFF:
individual pushbutton and central OFF pushbutton can be connected to one SELV or to the respective phase.



SK 0062 Z 01

Modular DIN Rail Components MDRC

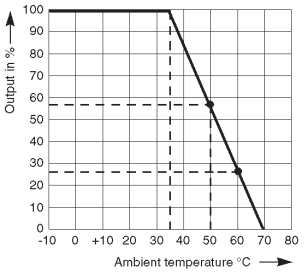
Universal high-performance dimmers for phase control or reverse phase control

DIN EN 60669-1,
DIN EN 50081-1,
DIN EN 50082-2

SK 0068 B 98

STD-500 MA

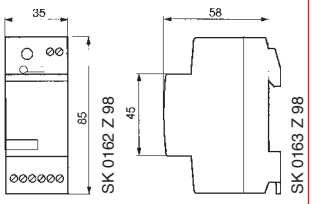
connected load-
ambient temperature diagram



SK 0046 Z 96

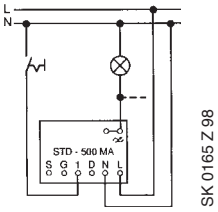
dimensions

measurements in mm



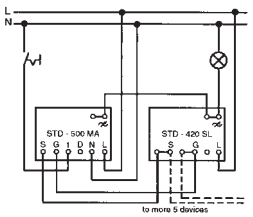
SK 0162 Z 98

SK 0163 Z 98



SK 0165 Z 98

1. STD-500 MA



SK 0117 Z 00

2. STD-500 MA, STD-420 SL

Devices for panel installation onto mounting rails (35 mm) according to DIN EN 60 715

mounting depth: 68 mm
mounting width: 35 mm = 2 modules
color: gray, RAL 7035

Universal high-performance dimmers STD-500 MA power extension STD-420 SL

Application/loads

- incandescent lamps
- 230 V tungsten halogen lamps
- electronic transformers for low-volt tungsten halogen lamps (phase control) e.g. ABB ETR-70-230; 105-230; 150-230
- low-volt tungsten halogen lamps via conventional transformers (reverse phase control)

Conventional transformers and electronic transformers must not be dimmed together!
Not suitable for dimming fluorescent lamps and transformers with current monitor. Not to be used in emergency power supply systems.

Calculation of rated power

rated power = transformer loss* + wattage
* in the case of electronic transformers 5 % of the transformer rated power
* in the case of conventional transformers 20 % of the transformer rated power

Conventional transformers

When operating conventional transformers, each transformer must be primarily protected against short circuit as provided for by the manufacturer. Safety isolating transformers according to DIN VDE 0551 must be used.
No loads may be switched via a serial switching contact, because overcurrent or overvoltage occurring during the resetting process may destroy the dimmer. Secondary no-load operation of conventional transformers is neither allowed when putting the device into operation nor during actual operation.
Always operate conventional transformers at their rated load. To obtain an even brightness level of the halogen lamps throughout the full operating range from bright to dark, transformers should be used that have the same secondary voltage and rating.

Technical data

rated voltage:	230 VAC ± 10 %/50/60 Hz	
rated current:	STD-500 MA: 2.17 VA	STD-420 SL: 1.83 A
max. switching capacity:	STD-500 MA: 500 W/VA	STD-420 SL: 420 W/VA
	depending on ambient temperature, see diagram to the left	
min. switching capacity:	STD-500 MA: 60 W/VA	STD-420 SL: 200 W/VA
power extension:	up to 3 kVAmax., 6 power elements max.	
power loss:	≤ 6 W	
pushbutton input:	230 VAC w 10 %/50 Hz	
max. cable length:	100 m	
max. cable length		
– between data outputs (D1, D2 and D):	2 m	
– between control outputs (NO-NO, G-G):	2 m	
degree of protection/		
protection against electric shock:	IP 20/according to DIN VDE 0660 Part 514	
ambient temperature:	0 °C/32 °F ... 35 °C/95 °F	

Electronic protection against short circuit, overload and excessive temperature; automatic load recognition, soft-off function possible, memory function, minimum brightness setting, optical overload indication.

Supply and load connection

Supply connection is effected via terminals “L” and “N”. Loads are connected to any of the terminals p (controlled outputs).

Pushbutton-operated

If operated via pushbuttons, the phase of the extension and the phase of the supply voltage must be identical (see 1 and 2).
In the case of pushbutton extensions, the lighting glow lamp must not be connected in parallel (use pushbuttons with neutral connection).
When installing the leads, make sure that there is enough space between the supply line and the load line (min. 5 cm).
For switching and dimming via the data line connected to terminal “D”, the dimmer may be operated via EIB control elements SB/S 2.2 or PSB/S 1.1 (see 3 and 4).

Power extension

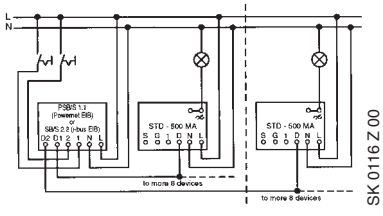
For synchronous switching and dimming of a lighting system exceeding a connected load of 500 W/VA, connect dimmers STD-500 MA and STD-420 SL via the “S” and “G” terminals. Controlled outputs must be connected in parallel (see 2).

Selection table

Universal dimmer

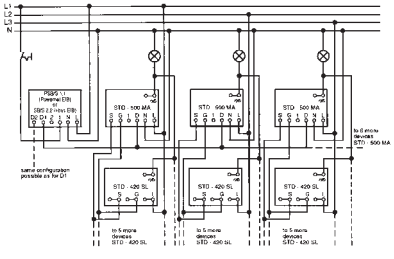
description	power loss W	order details type code	order code	bbn 40 11395 EAN	price 1 pc.	price group	w'ght 1 pc. kg	pack. unit piece
high-performance dimmer	max. 6 W	STD-500 MA	GJ B000 6590 A0161	01394 6			0.105	1
extension	max. 6 W	STD-420 SL	GJ B000 6590 A0166	01421 9			0.135	1

Note: load and control cable must not be laid in one cable.



SK 0116 Z 00

3. STD-500 MA, SB/S 2.2 or PSB/S 1.1



SK 0115 Z 00

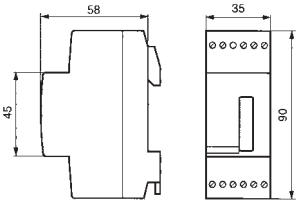
4. STD-500 MA, SB/S 2.2 or PSB/1.1, STD-420 SL

Modular DIN Rail Components MDRC
Control unit for universal dimmer STD 500 MA

SK 0111 B 00

STD-SBS

measurements in mm



SK 0151 Z 00

Devices for panel installation onto mounting rails (35mm) according to DIN EN 60 715.

mounting depth:	68 mm
mounting width:	35 mm = 2 modules
color:	gray, RAL 7035

Application

Control unit STD-SBS is a group control device for universal high-performance dimmers STD 500 MA and power extension STD 420 SL. Enables the independent control of 2 dimming groups with 9 STD 500 MA each and the respective power extensions STD 420 SL.

The control unit offers two connections for conventional pushbuttons that can control one group independently from the other. Furthermore, the device features an analogue input for 0 – 10 V or 0 – 20 mA converting signals in PWM (pulse width modulation) signals and thus jointly controls both dimmer groups.

After connecting the unit, the first operation of the pushbutton, or, as the case may be, analogue input determines what alternative will henceforth prevail. The other alternative is automatically blocked. This will persist even in the case of a power failure.

Types of operation (adjust with slide switch)

Pin 1 (Soft-ON)	Pin ON, connected STD-500MA start from OFF in ca. 5 sec. and go to max. brightness
Pin 2 (Soft-OFF)	Pin ON, connected STD-500MA go from max. brightness to OFF in ca. 5 sec.
Pin 3 (staircase lighting)	Pin ON, this type of operation is switched on via the pushbuttons (T1, T2). Depending on the type of function, individual or group control, the lighting is turned to max. brightness “Einzeln” (“individually”) (D1 or D2) or “Gesamt” (“group”). After three minutes, the light is turned down with Soft-OFF. This time period can be extended during the ON period for intervals of 3 more minutes by pressing the pushbutton again.
Pin 4 (holiday)	The control unit automatically saves the starting positions of each channel (D1/D2) in intervals of 6 minutes. After 24 hours, values are overwritten, starting with the oldest value. In the Pin OFF position, these data have no effect. Pin ON, the signals saved are automatically repeated in 24-hours intervals. Note: This type of operation allows for operation by pushbuttons. The holiday function is suspended and continued after switching off with the pushbuttons. Following a power failure, execution of “holiday data” may be delayed.
Pin 5 (cleaning light)	This type of operation is activated via an external, conventional switch; both channels D1 and D2 are adjusted to one brightness level. The brightness level is calibrated by the slide switch Pin ON, to allow for an increased brightness levels. Note: Other pushbutton or analogue signals are not accepted.
Pin 6 (analogue operation)	In order to differentiate between switching and dimming in the case of analogue operation, the Pin must be in the ON position. A precondition for this type of operation is that a switch (e.g. a time switch) is connected to pushbutton input T1 which will then assume the switching function.
Pin 7 (self test)	The self test checks the connection and the function of the connected STD-500MA. Pin ON, then the following signals are constantly sent on both channels D1/D2: D1: Soft ON, 1 second max. brightness level Soft OFF, 1 second break, then same procedure as for D2 To finish the self test, set Pin to OFF.
Pin 8 (reset)	Pin ON, all values stored are deleted, all functions deactivated and operation via pushbuttons/ switches is impossible. To abort reset, set Pin to OFF again.
Pin ·1 (analogue mode)	Pin ON = 0 – 20 mA; Pin OFF = 0 – 10 V Both channels operate synchronously. The device is switched off below a 10 % threshold of the input signal; if the value is exceeded, the device switches on with minimum brightness and reaches the maximum brightness level at 100 %. Note: If analogue operation = switching/dimming is to be separated, observe “analogue oper ation (Pin 6)” instructions.

A higher-ranking type of operation always invalidates lower-level types. The following hierarchy applies: reset, self test, group control, cleaning light, staircase lighting, manual operation.

Technical Data

rated voltage:	230 V~ ± 10 %; 50 Hz
specification:	EN 60669-2-1; EN 55022
extensions T1/T2	
pushbutton:	NO contact pushbutton
No. of pushbuttons:	unlimited
max. length of pushbutton cable:	≤ 100 m
reference potential:	phase
control output D1/D2	
PWM output:	12 VDC to N
max. length of control cable:	≤ 2m
ambient temperature:	– 5 °C/23 °F to 35 °C/95 °F
terminals:	up to 2 x 2.5 mm²
radio interference suppression:	CE
degree of protection:	II

electronic protection against short circuit, overload and excessive temperature

Selection table

description/ application	power loss W	order details type code	order code	bbn 40 11395 EAN	price 1 piece	price group	w'ght 1 pc. kg	pack. unit pc.
control unit	1.5	STD-SBS	GJ B000 6590 A 0152	00461 6			0.150	1

Modular DIN Rail Components
Surge Arresters
Ordering details

OVR 40 440 s P TS OVR 40 440

OVR 1N 40 275 s P TS

OVR 40 440 C

OVR 40 275 SC

OVR TC 200 FR

OVR TC 48

Max. discharge current (once) 8/20 wave $I_{max.}$ kA	Rated discharge current (20 times) 8/20 wave I_n kA	Protect. level U_p kV	Rated voltage U_n V	Max. steady state voltage U_c V	Description	Part number	EAN code	Pack. qty. (pcs)	Weight (pcs) kg

Surge arresters (class II)

Single pole

40	10	1.2	230	275	OVR 40 275	2CTB 8138 11 R 07 00	3660308505491	1	0.12
40	15	1.2	230	275	OVR 40 275 P	2CTB 8138 51 R 23 00	3660308504555	1	0.12
40	15	1.2	230	275	OVR 40 275 P TS	2CTB 8138 51 R 17 00	3660308504494	1	0.12
40	15	1.2	230	275	OVR 40 275 s P TS	2CTB 8138 51 R 14 00	3660308504463	1	0.12
40	10	1.8	400	440	OVR 40 440	2CTB 8138 11 R 03 00	3660308505439	1	0.12
40	15	1.8	400	440	OVR 40 440 P	2CTB 8138 51 R 11 00	3660308504432	1	0.12
40	15	1.8	400	440	OVR 40 440 P TS	2CTB 8138 51 R 05 00	3660308504371	1	0.12
40	15	1.8	400	440	OVR 40 440 s P TS	2CTB 8138 51 R 02 00	3660308504340	1	0.12

Multi pole

40	10	1.2	230	275	OVR 1N 40 275	2CTB 8139 12 R 03 00	3660308507730	1	0.22
40	15	1.2	230	275	OVR 1N 40 275 P	2CTB 8139 52 R 11 00	3660308506030	1	0.22
40	15	1.2	230	275	OVR 1N 40 275 P TS	2CTB 8139 52 R 05 00	3660308505910	1	0.22
40	15	1.2	230	275	OVR 1N 40 275 s P TS	2CTB 8139 52 R 02 00	3660308505859	1	0.22
40	10	1.2	230	275	OVR 3N 40 275	2CTB 8139 13 R 03 00	3660308507761	1	0.50
40	15	1.2	230	275	OVR 3N 40 275 P	2CTB 8139 53 R 11 00	3660308506283	1	0.50
40	15	1.2	230	275	OVR 3N 40 275 P TS	2CTB 8139 53 R 05 00	3660308506160	1	0.50
40	15	1.2	230	275	OVR 3N 40 275 s P TS	2CTB 8139 53 R 02 00	3660308506108	1	0.50

Neutral

65	20	1.9	0	250	OVR 65 N P	2CTB 8139 51 R 01 00	3660308505712	1	0.12

Accessories for Surge arresters class II (cartridges)

40	15	1.2	230	275	OVR 40 275 C	2CTB 8138 54 R 10 00	3660308505354	1	0.08
40	15	1.2	230	275	OVR 40 275 s C	2CTB 8138 54 R 09 00	3660308505347	1	0.08
40	15	1.8	400	440	OVR 40 440 C	2CTB 8138 54 R 04 00	3660308505293	1	0.08
40	15	1.8	400	440	OVR 40 440 s C	2CTB 8138 54 R 03 00	3660308505286	1	0.08
65	20	1.9	0	250	OVR 65 N C	2CTB 8138 54 R 00 00	3660308505255	1	0.08

Telecommunication and dataline protection Surge arresters

10	5	0.015	6	7	OVR TC 06 V	2CTB 8138 14 R 01 00	3660308505668	1	0.15
10	5	0.020	12	14	OVR TC 12 V	2CTB 8138 14 R 02 00	3660308505675	1	0.15
10	5	0.035	24	27	OVR TC 24 V	2CTB 8138 14 R 03 00	3660308505682	1	0.15
10	5	0.070	48	53	OVR TC 48 V	2CTB 8138 14 R 04 00	3660308505699	1	0.15
10	5	0.700	200	220	OVR TC 200 V	2CTB 8138 14 R 05 00	3660308505651	1	0.15
10	5	0.300	200	220	OVR TC 200 FR	2CTB 8138 14 R 00 00	3660308505644	1	0.15

Many other products with different voltages, discharge capabilities and configurations, are available on request, depending on electrical networks and on the location of the site to be protected.

Notes